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SURVEY OF RESEARCH ON GROUPING AS RELATED TO PUPIL LEARNING.

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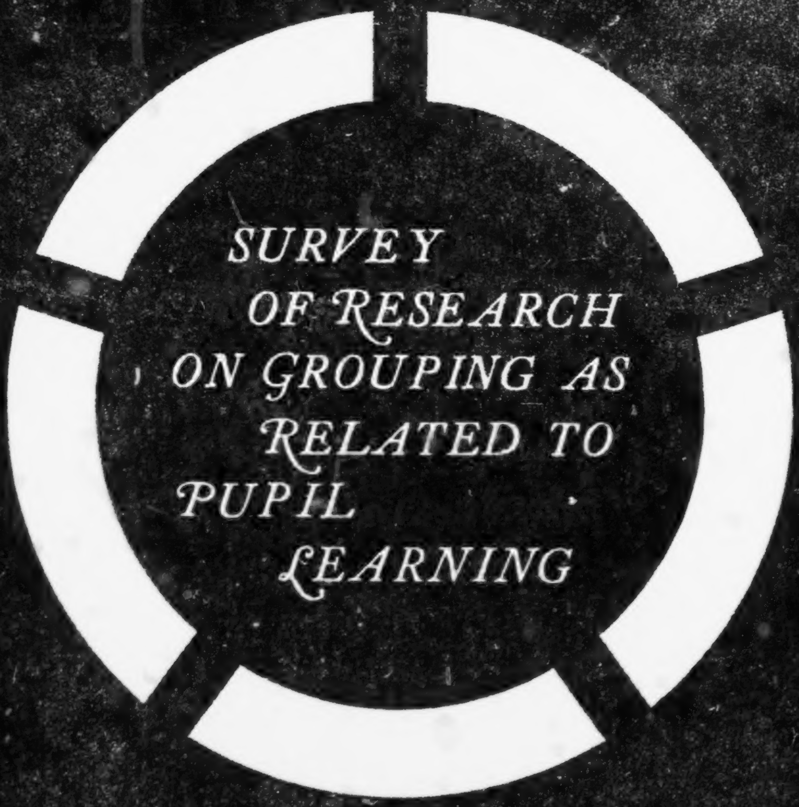
IN RESPONSE TO QUESTIONS ABOUT ORGANIZING CHILDREN FOR LEARNING, A SURVEY OF THE RESEARCH AND LITERATURE ON GROUPING OF ELEMENTARY SCHOOL PUPILS WAS CONDUCTED BY THE U. S. OFFICE OF EDUCATION. AFTER MANY RELEVANT STUDIES WERE EXAMINED, THE AUTHORS CONCLUDED THAT--(1) LEARNING RESULTS FROM MEMBERSHIP IN MANY DIFFERENT GROUPS, (2) ACHIEVEMENT GAINS MADE BY PUPILS IN CLASSROOMS REPRESENTING MORE THAN A NORMAL SPREAD OF DIFFERENCES AMONG CHILDREN WERE HIGHER THAN AVERAGE GAINS MADE BY PUPILS IN ABILITY-GROUPED CLASSROOMS, (3) FACTORS OTHER THAN THE PARTICULAR GROUPING METHODS USED ACCOUNT FOR DIFFERENCES IN ACHIEVEMENT GAINS, (4) SUCCESS IN ORGANIZING CHILDREN ACCORDING TO ABILITY IS PROBABLY AN UNREALISTIC EXPECTATION, AND (5) AMPLE OPPORTUNITY FOR FLEXIBILITY IN GROUPING CHILDREN IN THE ELEMENTARY SCHOOL SEEMS ESSENTIAL TO PROVIDE OPPORTUNITIES FOR MEETING CHANGING NEEDS OF CHILDREN. THIS DOCUMENT IS AVAILABLE AS FS 5.220--20089 FOR 40 CENTS FROM SUPERINTENDENT OF DOCUMENTS, U. S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C., 20402. (SF)



SURVEY OF RESEARCH ON GROUPING AS RELATED TO PUPIL LEARNING

OE 20089

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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SURVEY OF RESEARCH ON GROUPING AS RELATED TO PUPIL LEARNING

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Foreword

One of the most critical problems in the field of education today is the need to deal wisely with the widening range of individual differences among children in our schools. Some children learn rapidly, others slowly. Some are culturally deprived or otherwise disadvantaged. Some are more talented than others in some special ways. How to help every individual reach his potential for creative life lived in dignity and freedom poses many questions difficult to answer.

Among the most controversial issues in this regard is one involving relative merits of different ways of grouping children for effective and desirable learning. Typical questions are: "Should children be put in groups according to what administrators and teachers judge to be the children's ability?" "Do certain types of organizational procedures make a greater difference than others in helping children develop skills in reading, composition, critical thinking—in helping them develop human values, self-concepts, or mental health?"

This bulletin reports on a survey of research on grouping children. It examines innovations and experiments in grouping as related to pupil learning. A major function of this document is to serve as a guide to research in response to questions about organizing children for learning in the elementary school.

The Office of Education wishes to extend its sincere appreciation to the school personnel, researchers, writers, consultants, and others who cooperated in the preparation of this bulletin. The Office is especially indebted to Helen K. Mackintosh, formerly Associate Director of Administrative Instructional Support Branch, for her contribution in the development of plans for the survey of research and for the completion of the report.

JOHN L. CAMERON,
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Introduction

Nurturing individual potential in our society—providing the kinds of learning situations that contribute effectively to this end—is generally recognized as an important function of the school. Despite occasional pronouncements about the unquestionable value of "one-log-one-pupil-one-Mark Hopkins" type of learning situation as Raymond Payne[1] labels it, the history of educational effort has included the utilization of groups of learners, recognizing the fact that group situations are conducive to learning.

That learning does take place in groups is generally not perceived as a debatable issue. That people in a group must necessarily learn something from each other, for example, seems obvious. However, the extent to which and in what ways grouping children does or can make a difference in what they learn, for what purpose and how well, pose questions difficult to answer. A more widespread realization is needed that adequate knowledge about group situations of many different kinds and about the different types of functions they do or can serve is important. Some of the perceptions, concerns, questions, and beliefs about grouping and pupil learning by leaders in the field are identified as follows:

"Maybe because we know more. Maybe because the need—in a complex and crowded world—is so real," say Leland P. Bradford and Dorothy Mial.[2] For whatever reason, the study of groups has come of age as a respectable concern among people who would increase productivity in human endeavor—in classroom, school system, factory, and international council."

"Recent concern about grouping is reflected in numerous experiments," says Mary-Margaret Scobey.[3] "Schools are reorganizing traditional grade-level grouping and teachers are exploring new ways of differentiating instruction by classroom grouping."

Questions about the relative merits of different ways of organizing the elementary school are representative of recurring concerns about grouping in relation to meeting individual differences in ability. Concern for the development of individual potential is reflected in the increased emphasis in some situations in the use of programed material designed to help each individual progress at his own rate, especially in the learning of skills in such areas as reading, spelling, and mathematics. But as Bradford and Mial say:

> It no longer seems necessary to debate whether productivity depends on individual talent or group development. We know that the individual must sometimes work and create alone, and we know equally well that groups can often produce results no aggregate of individuals could separately achieve. Another fear —that pressure to conform may submerge the individual—continues to be a real one, but not many people today suggest that individualism can be defended by resisting a serious concern for groups and how they function.... One of the important social insights of our day is that the deliberate, conscious study of forces operating in a group can increase the chances that individual resources present in the group will be discovered and developed.

Among the questions we need to ask ourselves, are these: What are some of the basic conditions for effective group development and achievement of goals through group thinking and action? What conditions enable each group member to achieve his best and to make his special contribution?

Some leaders point out that traditionally teachers' concern has been not so much with learning groups as with teaching groups. But as Vere DeVault and Dan Anderson[4] say:

> It seems logical that our attention should turn from teacher behavior and teaching groups to learner behavior and learning groups.... How is individual learner behavior related to the establishment of learning groups? How can the teacher influence

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[1] Raymond Payne. "The Group—Resource and Technique," *Educational Leadership*, Vol. 21, No. 3, December 1963. p. 155.

[2] Leland P. Bradford and Dorothy Mial. "When is a Group," *Educational Leadership*, Vol. 21, No. 3, December 1963. p. 147.

[3] Mary-Margaret Scobey. "Developing and Using Classroom Groups," *Educational Leadership*, Vol. 21, No. 3, December 1963. p. 152.

[4] M. Vere DeVault and Dan Anderson. "Learning Groups Are Seldom Seen: A Project Report," *Educational Leadership*, Vol 21, No. 3, December 1963. p. 197.

> learner behavior and the establishment of appropriate learning groups?

Robert Bills[5] also challenges traditional approaches to grouping children. Among other things he says:

> Have we really shown concern for the individual learner?... Have not our concerns been for learning rather than learners, teaching rather than teachers... achievement rather than achievers?

Raymond Payne[6] asks the question, "What is there about groups so important for the development of learning in the individual." To begin with he defines the term "group" as follows:

> A group, sociologically defined in essential form, is two or more people in interaction. "In interaction" means that the members are reciprocally influencing each other, and that the action of one is affecting and at least partially determining the (response) behavior of the other(s). Understanding the person in his group aspects requires, therefore, sociological approaches. Stimulus-response theories alone will not suffice since the person is interacting, not simply acting, and his actions are in response to (or are motivated by) group situations, not simply to stimuli. Further, the person's action in the group situation is dependent upon his perceptions and definitions of that situation and, it must be remembered, these are themselves determined by the interaction of group definitions and the individual's relevant sets, not simply by the latter alone.

In any serious consideration of grouping in relation to children's learning, Alexander Frazier[7] suggests that we must ask ourselves the question, "What are groups good for?" A response to his own question follows:

> A group can be (1) a resource for learning through its members—information, other values, new ways of behaving; (2) a testing ground for new learning about all kinds of subjects, including oneself and others; (3) a creator of common learning through interaction and extension and understanding; (4) a content for learnings that depend upon relationships continued in time, planning together, leading, contributing to common ends and the like; (5) a kind of culture—a community rather than merely a "collectivity."

"What are the relative merits of ability grouping versus heterogeneous grouping?" is among the most commonly asked question about grouping children in the elementary school. Similar questions follow: Do some grouping methods more than others make a difference (a) in helping children learn to read, or to spell, or to write, (b) in helping pupils develop skills in critical thinking, (c) in the development of creativity, (d) in developing respect for human dignity and respect for others, (e) in the development of intellectual ability, (f) in helping children develop qualities and competencies especially important for becoming responsibile, capable, thoughtful, creative, thinking persons, increasingly able to live in accord with democratic values?

What are the values of grouping children according to need, interest, friendship, special abilities, special difficulties, or achievement levels? To what extent does provision for flexibility in the use of different grouping procedures make a difference in the kind, amount, or quality of pupil learning in a class?

In response to questions dealing with ability versus heterogeneous grouping, John Greene[8] responds as follows:

> What a teacher believes and subsequently does about grouping depends to a great degree upon his basic orientation.... If the program and the methods of grouping are of major concern to him, the boys and girls may get caught up in the mechanics of forming groups. However, if the teacher's basic orientation is such that the major focus is on the boys and girls, grouping procedures used—ability or heterogeneous—may not make a difference in pupil achievement.

But, Julia Gordon[9] reminds us that human values are of major significance in a program of education in a democracy, a form of government committed to the ideal of individual human worth. If we truly value the fullest development of each individual, then our study of grouping should be in terms of enhancing the values we hold for human beings. Do we believe that human welfare and the welfare of our society are best served by developing to the maximum the potential within each individual? If the answer is "yes," we must work with each child in ways which will leave opportunities open to him to become all that he can become. Adherence to certain organizational patterns can cause a barrier to the accomplishment of this end.

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[5] Robert E. Bills. "Learners or Learning," *School Life*, Vol. 45, No. 8, June 1963. p. 10.

[6] Payne, op cit., p. 156

[7] Alexander Frazier. "Learning in Groups," *School Life*, Vol. 45, No. 8, June 1963. p. 7.

[8] John D. Greene. "Focus on Program or People as Individuals," *Education Briefs*, U.S. Department of Health, Education, and Welfare, Office of Education, May 1964.

[9] Julia W. Gordon. "Grouping and Human Values," *School Life*, Vol. 45, No. 9, July 1963, p. 10–15.

Leaders in the field point out the importance of helping children in the development of good mental health and a positive self-image. Any serious consideration of what can be learned in group situations must recognize possibilities for negative and positive aspects of learning. Charles Long[10] reports as follows:

> Education and mental health can be mutually reinforcing. Mental health principles need to be infused into the totality of the learning process. A major potential for positive growth exists in the interaction between different spheres of experience. If emotional processes are to become active elements of the learning experience, education must take responsibility for providing integration mechanisms and relationships.

A century of research reported in the literature has explored the relative merits of different ways of grouping children for instruction. Much of the research has dealt with studies designed to ascertain the relative effectiveness of grouping according to ability and heterogeneous ways of grouping children. By far the largest number of such studies are in the field of reading achievement, although a large number compare results of pupil achievement in other subjects commonly taught in elementary schools.

A limited number of studies deal with the effects of grouping procedures on pupil attitudes, concepts of self and others, motivation to learn, their aspirations and interests, acceptance of responsibility, and other characteristics all of which make a difference in the intellectual growth and social behavior of children.

No attempt is made to develop a complete report of the research relative to grouping children for learning. On the other hand, many research studies have been explored, examples of which are given in this publication. Included are findings of research about learning and related factors concerning the nature of the human organism, motivation, and knowledge which contributes to increased understanding of normal expectations about learning, achievement, and social behavior of children in the elementary school. Also included are studies which point up teacher-pupil interactions in relation to pupil learning.

It is generally agreed that an important goal of American education is to give every individual maximum opportunity for full development of his potential —important for the individual and for the preservation of a free society. To provide learning situations designed to foster children's learning toward this end is recognized as an important objective of the total program of education.

The major purpose of the introduction has been to identify some of the questions, concerns, and beliefs of leaders in the field about grouping and children's learning. In response to questions and concerns, the major purpose of this publication is to report findings of research and informed judgment on the subject.

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[10] Charles M. Long. "Grouping of Children: Its Meaning for the Preservice Education of Teachers," *School Life*, Vol. 46, No. 3, December 1963. p. 17–19.

Chapter I

Nationwide Studies on Grouping Practices in the Elementary School

How do schools of today organize children for instruction? What grouping procedures are most commonly used in the Nation's elementary schools? What are the relative merits of the procedures used? Questions such as these are commonly raised by educators and lay citizens interested in the improvement of learning opportunities for children in the Nation's elementary schools.

Harold Shane[1] reports a survey of nationally recognized suburban elementary schools in the early 1950's in which he found a trend away from chronological age grouping toward grouping on the basis of social maturity. Ability grouping was the least common in his selected sample which in Shane's judgment probably reflected liberal administrative thinking.

A recent nationwide study was made of elementary school organization and administration in urban places with populations of 2,500 or more. Stuart Dean[2] reports on ability and heterogeneous grouping practices as follows:

> . . . national practice is in terms of heterogeneous grouping in the grades 1 through 6 level, since 72.1 percent group heterogeneously and only 16.9 percent group homogeneously in these grades. On the grades 7 and 8 level, practice continues to favor heterogeneous grouping, although the margin is not so great, with 60 percent grouping heterogeneously and 34.4 percent grouping homogeneously.

Although practices within the individual classrooms vary, some are more prevalent than others. A commonly used grouping pattern for instruction in reading in the elementary grades, for example, is one of organizing ability or achievement level groups within a heterogeneously grouped classroom for rapid, average, and slow achievers. As Alice Miel[3] reports:

> This three-group plan has enjoyed wide popularity, with teachers' manuals and books and courses on the teaching of reading giving much help in implementing it.

Some of the critics of the elementary school say that children pass from grade to grade without being required to meet grade standards or to show evidence of academic progress. "Social promotion," some say, "is the accepted practice in the elementary school today." What are the facts? A national survey of the U.S. Office of Education includes a report on current promotion policies in the Nation's schools. Stuart Dean[4] reports national findings:

> Promotion on the basis of academic factors is the preponderant national pattern. Only a small segment of our schools reported that their promotion practices were based on the so-called social factor. Actually, about 70 percent of the urban places reported that promotion was based on academic considerations, while less than 12 percent reported group progress as a basis for promotion.

In a recent opinion poll conducted by the Research Division of the National Education Association,[5] 721 principals of elementary schools, representing school districts of all sizes (large, medium, small), were polled on school organization and certain aspects of the instructional program. Two questions on ability grouping were included in the poll and a report of the questions and some of the responses follow:

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[1] See Harold G. Shane. "Grouping Practices Seem to Favor Composite Plan." Nation's Schools, Vol. 49, May 1952. p. 72-73.

[2] Stuart E. Dean. *Elementary School Administration and Organization.* U.S. Department of Health, Education, and Welfare, Office of Education. Bulletin 1960, No. 11. Washington: U.S. Government Printing Office, 1960. p. 69.

[3] Alice Miel (Ed.) *Individualizing Reading Practices.* New York: Bureau of Publications, Teachers College, Columbia University, 1958. p. v.

[4] Stuart E. Dean. "Pass or Fail? A Study of Promotion Policy." *The Elementary School Journal,* Vol. 61, No. 2, November 1961. p. 89. (Copyright 1962 by the University of Chicago.)

[5] National Education Association, Research Division. "Principals Opinion." *NEA Research Bulletin,* Vol. 40, May 1962. p. 61-62.

1. Considering all the advantages and disadvantages of ability grouping according to IQ or achievement score, do you favor such grouping, into separate classes, in elementary school?

Principals of schools of all sizes responding to this question were equally divided in their opinion: 47.6 percent said, "Yes"; 47.4 percent said, "No."

More than one-half, or 52.1 percent, of the principals of medium-size schools did not believe in such grouping.

2. In your opinion, does the school of which you are a principal presently tend to underemphasize appropriate education for any of the three groups of children: the gifted, the average, and the slow learner?

More than one-half of the principals of large school districts reported that none of the three groups is neglected.

More than one-half of the principals of all schools reported too little emphasis on the gifted.

Approximately one-fourth of the principals of all schools reported too little emphasis on the slow learner.

Lillian Gore[6] reports figures on grouping practices obtained from a national survey of early elementary education in the public schools of the United States in 1960–61. Included in the study were 11,645 school districts in urban and rural communities with enrollments above 299. A report of findings follows:

A group of related factors rather than ability or achievement alone was used in this survey to designate homogeneous grouping. The survey instrument contained the question: "To influence the range of differences in achievement, background, chronological age, mental ability, physical maturity, and social-emotional development in a class, what is the prevailing practice in your system for assigning pupils to classes?" Three basic methods of grouping defined as follows were used: (1) homogeneous (effort made to control the range), (2) partially homogeneous (some effort made to reduce the range), and (3) heterogeneous (no effort made to control the range). The responses indicating one class per grade were negligible and, therefore, were combined with the heterogeneous responses.

Dr. Gore also found that the policies which control the assignment of kindergarten and primary children to classes in the majority of public school districts favor heterogeneous methods of grouping in which no efforts are made to control the range of a number of variables. Smaller school districts use heterogeneous grouping more than the larger districts. For the country, partly homogeneous grouping is used more than homogeneous, at all levels. As school districts increase in size, they employ this method more than smaller ones. The two grouping methods, heterogeneous and partly homogeneous, account for approximately 85 percent of the districts for grades 1–3 and 93 percent for kindergarten classes. Homogeneous grouping policies, therefore, are found for these levels in few districts, although the practice increases from kindergarten through grade 3, and is more prevalent in the North Atlantic and Southeastern regions than elsewhere.

A plan of organization used in some schools is the nongraded or continuous progress. Stuart E. Dean[7] found that the nongraded primary unit had been adopted by 18 percent of the more than 4,000 schools in urban places (population 2,500 or more), that he studied in October 1958–January 1959 and that it was in use in all sections of the country and in all population groups studied.

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[6] Lillian Gore. *A Survey of Early Elementary Education in the Public Schools,* U.S. Department of Health, Education, and Welfare, Office of Education. Washington: U.S. Government Printing Office, 1965. p. 35–36.

[7] Stuart E. Dean. *Elementary School Administration and Organization.* U.S. Department of Health, Education, and Welfare, Office of Education. Bulletin 1960, No. 11, OE 23006. Washington: U.S. Government Printing Office, 1960. p. 24–27.

Chapter II

Ability and Heterogeneous Grouping

Many studies throughout the years have compared academic progress of children grouped according to ability with progress made when grouped heterogeneously. Conclusive and definite answers to questions commonly asked are difficult to get. Some studies show gains favoring ability grouping, some favoring heterogeneous grouping. Others show little or no significant difference in pupil gains between procedures used. The evidence against or in favor of ability grouping remains vague in spite of a rather persistent belief that learning problems would be greatly alleviated if children on similar levels of ability or achievement could be grouped together for instructional purposes. Olson[1] tells us that:

> Surveys of achievement demonstrate that no matter how children are grouped, they still learn in accordance with their individual abilities.

However, the problem of securing optimal working groups continues, and as Wilhelms[2] says:

> ... many good minds have worked at it in various ways, and a satisfying solution has not yet been found.

And so, although sound answers to many questions about organizing children for desirable and effective learning are difficult to obtain many research studies on ability and heterogeneous grouping have been reported. The results of some of these studies will be identified.

A. *Effects of Nonpromotion on Pupil Learning*

More than 100 years ago schools with large numbers of children began facing the need for some division of labor among the teaching staff and for dividing the child population into groups of convenient size. Growing out of a felt need to form clusters of pupils for the same level of work, the Quincy Grammar School of Boston in 1848 set up an organization of graded rooms. By 1860 many cities had adopted this device for classifying pupils. Within the next 10 years it was found that extreme rigidity of a single grade-level standard had developed, and wholesale amounts of failure became the rule. In an effort to reduce the variability within each grade room and to guarantee subject mastery by repetition, schools relied upon retardation of pupils.

The fact that a wide range of individual differences in ability is normal expectancy in any age group was apparently not recognized. By 1909 a number of educators had become concerned about excessive retardation in their schools. A foundation-supported study directed by Ayres[3] showed schools averaging more than a third, sometimes two-thirds of their pupils retarded. In any one year, 20 percent of the pupils were repeating last year's grade. Studies also showed that repeating grades did not usually increase a pupil's mastery of the subject matter as much as going forward would have done. Range of variability of subject matter mastery did not change very much, but variability in age, physical size, emotional maturity, and the like multiplied. The effects of continuous failure upon children were recognized.

Ayres[4] concluded, "Success is necessary to every human being. To live in an atmosphere of failure is a tragedy to many. It is not a matter of intellectual attainment; not an intellectual matter at all but a moral matter."

Goodlad and Anderson[5] report that a number of studies between 1911 and 1941 showed that children did not usually learn more by repeating a grade. In fact, the more common result was that low achievers experienced less growth in subject matter achievement when retained than they did when promoted.

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[1] Willard C. Olson. *Psychological Foundations of the Curriculum*, Educational Studies and Documents No. 26. Paris: UNESCO, 1957. p. 61.

[2] Fred T. Wilhelms. *The Nature of Classroom Grouping for Learning.* Background for ASCD discussion group H-7, 1958. p. 14.

[3] For a complete report, see Leonard P. Ayres, *Laggards in Our Schools.* New York: The Russell Sage Foundation, 1909.

[4] *Ibid.*

[5] For a complete report, see John I. Goodlad, and Robert H. Anderson, "To Promote or Not To Promote," *The Nongraded Elementary School.* New York: Harcourt, Brace and Co., 1959. p. 30–40.

Recent findings also show that promoted low achievers generally do better in schoolwork than nonpromoted counterparts, although there are exceptions. Some of the nonpromoted children show reasonable growth in achievement during the repeated year. But to offset this, in the Coffield study[6] for example, a much larger percentage actually did worse on achievement tests after a year of repetition than they had done when tested just before the impact of failure had apparently destroyed the will to learn and impaired some of the learning that already had occurred.

Some people claim that a lower quality of work will be the result if children feel assured that they are not likely to be retained in a grade even though their achievement may be somewhat less than average for the class. Otto and Melby[7] tested this claim by arranging for experimental and control groups at the second- and fifth-grade levels. At the beginning of the semester, the children in the experimental group were told that all would go to the following grade next term. The children in the control group were reminded often they must do good work or they would not be promoted.

Although the differences in gains between the two groups were too small to be of statistical significance, the results favored the experimental group.

Another claim often heard is that high promotion rates in a school lowers the average achievement and reduces incentive of pupils to learn. This claim is not supported by the evidence. Cook[8] contrasted nine school systems that approached automatic promotions with nine that maintained what they thought of as rigorous standards. There was a matching for size, general socioeconomic status, and professional qualifications of teachers. The schools claiming rigorous standards had high proportions of overage and slow learners. Achievement of pupils of the same chronological and mental ages in the two groups was compared. No significant difference was found in the achievement of pupils in the two groups. Retardation did not make groups more homogeneous. The groups with high degree of retardation were below average in mental and achievement ages.

Caswell and Foshay[9] explain that:

> Nonpromotion often results in emotional depression and discouragement, in the pupil's distrust of his own ability, and ultimately in his expectation of further failure. Caught up in a situation in which he does not succeed and where continued striving does not lead to accomplishment and satisfaction, the child tends to rationalize his failure and to build up explanatory mechanisms.

Among the methods proposed and practiced in the early part of our century and in some groups advocated at the present time is retention of low achievers in a grade until they have reached the so-called standard for a grade. Evidence indicates, however, that a wide range of individual differences in ability and achievement is normal in any age group. High retention rates of low achievers merely means piling up a growing number of overage and unhappy pupils in each grade. On the average, retention does not raise the level of pupil achievement in a class.

This does not mean that the chances for some individuals to succeed might not be improved by remaining in a grade an extra year. Many factors need to be taken into account when in doubt about the best placement for a child. An assessment of the learning opportunities available may need to be made in order to determine which are likely to be of most value to him. Olson[10] says:

> . . . For his own comfort a slowly growing child should at times probably take a year longer to finish elementary school and a child who is generally accelerated in his social, emotional, physical, and intellectual growth can make a gain of modest amount without jeopardy to his status in the group or to his total growth. The evidence does not justify broad generalizations or a particular plan, but leaves the way open for individual adjustments.

B. *Effects of Ability and Heterogeneous Grouping Compared*

A number of studies report the results of comparing achievement gains of children when grouped according to ability, maturity, or achievement levels and when grouped heterogeneously. Reports on some of these follow:

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[6] See W. H. Coffield, "A Longitudinal Study of the Effects of Nonpromotion on Educational Achievement in the Elementary School." Unpublished doctoral dissertation. State University of Iowa, 1954. See also W. H. Coffield, and Paul Blommer, "Effects of Nonpromotion on Educational Achievement in the Elementary School," *Journal of Educational Psychology*, Vol. 47, 1956. p. 235–250.

[7] See Henry J. Otto, and E. O. Melby, "An Attempt to Evaluate the Threat of Failure as a Factor in Achievement," *Elementary School Journal*, Vol. 35, April 1935. p. 588–596.

[8] See Walter W. Cook, "Some Effects of the Maintenance of High Standards of Promotion," *Elementary School Journal*, Vol. 41, February 1941. p. 430–437.

[9] Hollis L. Caswell and Arthur W. Foshay. *Education in the Elementary School*, 3d ed. New York: American Book Company, 1957. p. 387–394.

[10] Willard C. Olson. *Child Development*, Second Edition. Boston: D. C. Heath and Co., 1959. p. 425.

J. E. Houston[11] reports a study of what was done to better learning opportunities for so-called failures in the first grade.

> In the schools of Lovell, Wyo., a study was made of the problem of a considerable number of failures in first grade. It was found that these so-called failures were usually children who were youngest chronogically, barely 6 years old by the time set as the deadline for admittance. For 2 years a record was kept of the reading readiness scores and subsequent progress of first-grade pupils, and the record supported the belief that usually the youngest failed.
>
> It was decided to admit only children who were 6 years old by the first of September, thus raising the admittance age. The primary department was reorganized along the line of growth or development levels. This resulted in the setting up of three such progress levels within each grade. Pupils were grouped according to their maturity or progress in school. The original groupings were determined by reading readiness tests, personal interviews, and teacher's appraisal of the child's interest and reactions.
>
> The second section consisted of the children who were more nearly average in maturity. In the third section were children who met the chronological age requirements but who needed much readiness work. Basic reading readiness was begun at once in the first two groups. In the third group progress was slower but the curriculum was laden with opportunity for experience, development of muscular control, and preparation for reading readiness. This program was extended so as to include grade 4. The assumption was that, if necessary, a child could have 4 years in which to complete the basic reading program.
>
> The investigators concluded that this method of grouping reduces grade failures and recognizes individual differences in children. "Our aim is to accept the child as he comes to us and to take him as far as we are able while he is under our care."

In a study directed by Russell[12] in grades 4, 5, and 6 of the San Francisco Public Schools, instead of the usual grouping within a class, the children were divided within the school into three groups for instruction in reading: high, average, and low, according to their reading ability. The plan was known as "circling." The test results showed no reliable differences in the achievement of the circling and noncircling groups.

A. G. Breidenstine[13] compared the educational achievement of pupils of equal ability in homogeneous and heterogeneous sections. Results showed that pupils of high intelligence did slightly better when in nondifferentiated classes. Pupils of average ability did as well in segregated groups as in mixed classes. However, dull pupils in differentiated classes excelled in comparison with their classmates.

In an experimental study directed by P. M. Hartell,[14] the children in the fifth and sixth grades were divided into two groups, A and B. The 687 children in Group A first had instruction under homogeneous grouping followed by instruction under heterogeneous grouping. A similar number of children in Group B first had instruction under heterogeneous grouping. The grouping was based on results of Stanford achievement tests given in December.

During the homogeneous period a differentiated course of study was used for each of three subgroups. The heterogeneous group had the usual course of study without any experimental attempts at individualization.

The experiment ran approximately 5 months under each condition. Achievement tests were administered at appropriate times. From the results it was possible to compute the actual gain in months under each plan. No significant differences were found between the gains made by the pupils when homogeneously grouped and when grouped heterogeneously.

Laddie J. Bicak[15] reports a study which was undertaken as an attempt to provide answers to such questions as: Do pupils in comparable ability sections taught in homogeneous and heterogeneous classes differ in overall achievement in eighth-grade science? Do they differ in achievement as measured by an application test? Do they react in a significantly different manner as a result of having been a member of a particular heterogeneous or homogeneous section? Bicak reports findings and conclusions as follows:

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[11] Adapted from J. E. Houston. "We Separate Beginners Into Three Progress Levels," *Nation's Schools,* Vol. 45, April 1950. p. 42–43. (Copyrighted by the Modern Hospital Publishing Co., Inc., Chicago.)

[12] For a complete report see D. H. Russell, "Interclass Grouping for Reading Instruction in the Intermediate Grades," *Journal of Educational Research,* Vol. 39, 1946. p. 462–470.

[13] For a complete report see A. G. Breidenstine, "The Educational Achievement of Pupils in Differentiated and Undifferentiated Groups," *Journal of Experimental Education,* Vol. 5, September 1936. p. 91–135.

[14] Adapted from P. M. Hartell. *Homogeneous Grouping as a Policy in the Elementary Schools in New York City.* New York: Bureau of Publications, Teachers College, Columbia University, 1936.

[15] Laddie J. Bicak. "Achievement in Eighth Grade Science by Heterogeneous and Homogeneous Classes." (Paper based on author's dissertation for the degree of Ph. D., University of Minnesota, 1962.)

> In testing a series of null hypotheses, no significant difference (1-percent level), was found between mean scores of comparable heterogeneous and homogeneous groups on the pretest and post-test of meteorological knowledge and the test of application of principles. Each group made significant mean gains in meteorological knowledge but no group gained significantly more than its counterpart. For two midgroups composed of the middle ability pupils selected from the heterogeneous and homogeneous classes, no significant differences were found on any measure previously mentioned.
>
> A course attitude questionnaire was administered to observe the reaction of each pupil to his particular learning environment. Significant differences were noted when the questionnaire was analyzed through use of the chi-square technique, in the items concerned with pupil attitude toward grouping and the number of experiments and demonstrations presented.
>
> It was concluded that ability grouped classes with pupil selection based on a single intelligence measure—taught the same general matter with added material of the enrichment type required of the high ability class, and with adjustment on methods and rate of instruction made in terms of the ability of the groups—achieved at the same mean level as heterogeneous classes for which the same enrichment materials were made available and in which pupils were encouraged to work up to their capacities.

Measurement of the achievements and growth of individuals in groups of equal intelligence shows that not all of the bright children succeed and that not all of the children identified as dull fail. As a result of considerable study in the first quarter of this century, S. A. Courtis[16] found that:

> There is both success and failure in each group to such an extent that in the highest and lowest fifth of 4,000 first-grade children the number of individuals having identically the same scores in a reading test at the end of the semester were recently found to be one-half of the total number. Further, there are some data which suggest that for any large group of children the total distribution and the median scores are the same whether the individuals are taught in undifferentiated sections or in classes carefully sectioned on the basis of intelligence.

C. *Ability and Random Grouping*[17]

The general purpose of this research was to study differences in the effects upon elementary, junior high school, and high school pupils of an ability grouping system that differentiates the curriculum principally by adjusting the rate of presentation of curriculum materials, and a random grouping system that differentiates the curriculum principally through the use of enrichment. The study explores several dependent variables that, it was thought, might be affected differentially by the two grouping treatments, some of which are reported here: achievement, realization of achievement potential, study habits, sociometric choice, self concept, and personality.

Over a 4-year period data were collected to compare differences between the two grouping systems (ability and random) and to examine separately the achievement differences occurring between superior, average, and slow learners. Investigator Walter Borg reports that two adjacent and closely comparable school districts in Utah provided the setting in which the research was conducted. One district employed *random grouping with enrichment* and the other used *a system of ability grouping with acceleration coincident with the beginning of the project.* Over 2,500 pupils from the fourth-, fifth-, sixth-, seventh-, eighth-, and ninth-grade levels were selected in the two districts. During the second year, the sample was increased to approximately 4,000 pupils.

The grouping system used in District A (ability grouping) employed a standard achievement battery, the *California Achievement Test Battery* as a basis for grouping pupils into three ability levels. At the elementary school level, tests were administered in reading, arithmetic, and language in the spring of each school year. At the secondary school level, District A pupils were tested and divided into three ability levels in mathematics and science only. In general, the goal of District A program at both elementary and secondary level was to adapt curricular materials to the different ability levels and concurrently adjust the *rate* of presentation to the level of the child. At a given grade level the slow group would use curricular materials appropriate to their ability and would work on learning objectives that had probably been attained by the average groups earlier in the year and by the superior groups during the preceding year. Adjustment of *rate* rather than *depth* to provide for individual differences is characteristic of acceleration programs as opposed to enrichment programs. The curriculum that progresses at different rates for different pupils requires a careful integration between the elementary, junior high, and senior high school programs.

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[16] S. A. Courtis. "Contributions of Measurement," *The Second Yearbook.* Bulletin of the Department of Elementary School Principals, 1923. p. 161.

[17] Adapted from Walter R. Borg and David Brinks. *An Evaluation of Ability Grouping,* Cooperative Research Project No. 577. Washington: Office of Education, U.S. Department of Health, Education, and Welfare, 1964. 441 p.

In contrast to District A where the main goal was to adjust *rate* of learning to individual differences, District R (random grouping) employed enrichment in heterogeneous classrooms to adjust the *depth* of learning to individual differences. For example, if successful, an enrichment program should help the superior child develop a fuller understanding of the work he is doing. It should also provide the bright child with more time for independent study than would be available to him in an accelerated program.

In all District R elementary classrooms, the libraries provided were quite extensive and contained enrichment materials aimed at adapting the curriculum to different ability levels within the classroom.

In junior and senior high school classes, District R provided curriculum adjustment within the heterogeneous classroom through the use of enrichment. At the junior high school, for example, enrichment books in mathematics were provided for both seventh- and eighth-grade superior pupils. Additional materials designed for adjusting the mathematics and science curriculum to both superior and slow pupils were available in the central library in each District R junior high school. In similar ways enrichment materials and methods were used in senior high school classes in mathematics and science.

A brief review of results of this study follows:

Achievement

When all achievement data in this project are examined one must conclude, says Borg, that there is very little to choose from in terms of achievement between ability grouping with acceleration and random grouping with enrichment. In reviewing 47 statistical comparisons between ***superior pupils*** in the 2 districts, it was found that 15 comparisons favored ability grouping, 3 favored random grouping; the remaining 28 showed no significant differences. In comparisons between achievement gains of ***slow pupils*** in the 2 districts, 4 favored ability grouping, 7 favored random grouping; the differences between ability and random grouping in the remaining 36 comparisons were not significant.

The statistically significant differences found in this research were not large enough to suggest more than a slight advantage for one grouping system over the other and these advantages were far from consistent from one grade level or ability level to another. The investigator[18] concludes:

> Therefore, it is our conclusion that the decision to employ ability grouping or random grouping must be based upon considerations other than achievement.
>
> As indicated earlier, the research reported here includes consideration of other variables which will help provide light on the overall advantages and disadvantages of the two grouping systems—ability and random.

Realization of achievement potential

Although a number of studies have been conducted in which achievement under different grouping systems has been compared, achievement of individual pupils in these systems as related to the achievement one might expect on the basis of the individual's ability has not been explored.

In this phase of the Utah study, samples of elementary school children from random-grouped and ability-grouped classrooms were classified as overachievers, underachievers, and normal achievers, based on the relationship between their achievement, chronological age, and mental age. The California Short-Form Test of Mental Maturity for grades 4 through 8 was used to obtain mental ages and language IQ's needed for establishing expected age-grade placement. The proportion of overachievers, normal achievers, and underachievers among pupils of different ability levels in the two systems were then studied in an effort to obtain insight into the question of who is motivated to achieve under these two methods of grouping. In the second phase of this study, descriptive data were collected on samples of underachievers and normal achievers in an attempt to identify possible causes of underachievement.

Other measures used for this and additional phases of the study which will be reported later included the *California Study Methods Survey; The Thinking about Yourself Inventory; Index of Adjustment and Values; Thematic Apperception Test;* social class questionnaires, attitude tests, and case histories.

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[18] *Ibid.*

On the basis of the findings, some of the conclusions drawn from the first phase of the study are:

☐ There was a significant tendency for girls to be overachievers more frequently and underachievers less frequently than boys. This trend was present at both grade levels.

☐ Overall comparisons between Districts A and R indicated that ability grouped pupils were more often classified as overachievers and less often classified as underachievers than were random-grouped pupils.

In a later phase of the study, the findings support the following conclusions:

☐ When pupils of similar ability were compared, neither grouping treatment was consistently related to the study methods used.

☐ Study methods were significantly related to ability level in District R but not in District A.

☐ There were no significant differences between the study methods scores of normal achievers and underachievers of comparable ability.

☐ There was a consistent tendency for District A pupils to have higher emotional disturbance scores than District R pupils on the *Thinking About Yourself* questionnaire. This trend was present among both normal achievers and underachievers. These data suggest that ability grouping leads to greater discrepancies between "self" and "wanted self" than random grouping. It may be that the ability grouping situation forces the pupil to make a more realistic self-appraisal of his school performance that in turn tends to lower his satisfaction with his performance.

☐ Within-treatment comparisons showed a consistent tendency for pupils of lower class ability classification in District A to have less favorable emotional scores. No such pattern emerged in District R data. This finding appears to support the aforementioned conclusion that ability grouping makes the pupil of lower ability more aware and less acceptant of his achievement status.

☐ Incidence of health problems was unrelated to grouping treatment, sex, ability level, or underachievement. It may be concluded that the physical and health variables measured in the Utah study are not a factor in underachievement.

☐ Sociometric status was not related to underachievement.

Study habits

Considerable evidence concerning study habits was collected over the 4 years of the Utah Study. Because of the lack of suitable study habit measures that can be administered at the elementary school level, pupils were not administered a study habits test until the final year of the study when they were in grade 7. Near the end of grade 7, these pupils were administered the *California Study Methods Survey* (CSMS). This measure contains 150 items and yields 4 scores plus a total score. The scores these pupils obtained in grade 7 provide the best evidence available in this project on the relative effectiveness of *random grouping with enrichment versus ability grouping with acceleration* in developing study attitudes and skills at the elementary level.

In looking over the results on the California Study Methods Survey one is impressed by the consistently higher scores of random-grouped pupils. It may be that the enrichment program in effect in the random-grouped schools provided the superior pupil with more time for independent study than was available in the ability-grouped system with its accelerated curriculum. In the process of independent study the superior pupil in the random groups may have developed the better study habits and attitudes that are reflected in the California Study Methods Survey scores.

Yet, this possible explanation would hardly account for the differences in *average pupils,* because the amount of time the average pupil has to devote to enrichment materials in the heterogeneous classroom is rather limited and the materials available are usually aimed at the extreme groups with most materials for the superior pupils. These pupils, however, may have been influenced by another factor; namely, the challenge presented to them by the presence of superior pupils in their class. The superior pupils may have motivated the average pupils to set higher goals, and better study habits and attitudes may have resulted. This same factor could also have operated to motivate low-ability pupils although one would expect it to be less effective for this group. Many of the goals and performance standards set by superior pupils in the heterogeneous class would be unattainable for pupils of low ability, and may have tended to lead to discouragement or rationalization.

One must conclude on the basis of these data that ability grouping of the type used in District A does not lead to better study habits for elementary pupils at any ability level. Instead, the data indicate it is highly probable that *heterogeneous grouping with en-*

richment tends to develop better study habits at the elementary levels, especially among superior and average pupils.

Results on the California Study Methods Survey showed all of the total score differences and seven of the nine subtest differences between comparable groups in District A and R to be statistically significant. Differences were generally largest between pupils of superior ability. These results lead to the conclusion that pupils in a random grouping situation consistently develop better study habits during the elementary school years than pupils in an ability grouping situation.

In comparing the study habits scores of pupils of different ability levels within each treatment, a marked relationship between study habits and ability level was apparent. Of the 52 differences comparing superior pupils with average and slow pupils, 46 were statistically significant, as were 11 of the 26 comparisons made between average and slow pupils. All significant differences favored the group of higher ability. These results support the conclusion that superior pupils generally develop superior study habits in both grouping treatments. This evidence counters the frequently heard criticism that superior pupils do not learn to study in the public schools.

Sociometric choice[19]

People are an important part of the environment to which individuals react in the processes of developing and learning. These people may be in groups: families, classrooms, communities, social classes, or nations. However, the individual and the group are interdependent. The individual along with a number of other individuals comprise the group. In various sizes and types of groups, many social needs are met and personality development has its roots. The need to belong to a group is a powerful force. It furnishes strong motivation for behavior. In our society almost every individual attempts to become a member of some group. Dineen and Gary[20] maintain that "among the chief factors necessary for developing a full life in a heterogeneous group such as a class of children is a satisfactory friendship pattern. When a child is with others who accept him and respond to him, that is, others with whom he wants to associate, he can contribute more and function better in the group."

The matter of social relationships and adjustment in ability grouping has been of primary concern to critics. The design of this research[21] provided for the investigation of the effects of three different conditions on measures of sociometric status and accuracy of perceived status: (1) the grouping treatment (ability grouped or random grouped), (2) ability level (based on academic achievement), and (3) sex. Comparisons were made between the two districts, between the various ability levels, and between sexes on the aforementioned dependent variables.

Sociometric status is defined as the total peer choice score or the total number of times a pupil was selected on a sociometric choice measure by his classmates as a preferred companion on any one of the three specific activities or situations used as criteria. By accuracy of perceived status is meant the accuracy of the individual student's estimation or "guess" of who would choose him as a preferred companion. Accuracy of perceived status was determined by comparing a pupil's guesses of who would choose him on each of the criteria with those who actually did choose him.

The sociometric data collected for pupils during their fourth-, fifth-, and sixth-grade years and for the sample which includes data for pupils during their sixth-grade year provide evidence in support of the following conclusions relating to sociometric choice in ability grouped and random grouped classes during the intermediate grades:

☐ The overall proportions of stars, regulars, and neglectees in ability-grouped and random-grouped classes were similar. This fact leads to the conclusion that ability grouping does not result in permanent leadership vacuum in groups of average and slow pupils. Evidence suggests, however, that some time is required for ability grouped average and slow fourth-grade pupils to emerge as sociometric stars and a temporary social leadership vacuum is thus created at this grade level.

☐ Superior students lose some sociometric status when placed in ability-grouped classrooms. This loss is particularly evident in the star classification but is not accompanied by any increase in the neglectee-isolate classification.

☐ Average and slow pupils appear to have a far better chance of gaining social recognition in ability-grouped classrooms than do comparable pupils in random-grouped classrooms. For the slow pupil, ability grouping not only appears to increase the pupil's chances of being classified as a star, but also reduces his chances of being classified as a neglectee-isolate.

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[19] Adapted from Walter R. Borg and David Brinks, "Sociometric Choice," *An Evaluation of Ability Grouping*, Cooperative Research Project No. 577. Office of Education, U.S. Department of Health, Education, and Welfare. Logan, Utah: Utah State University, 1964. Chapter 7.

[20] M. A. Dineen and R. Gary. "Effects of Sociometric Seating on a Classroom Cleavage," *Elemenary School Journal*, Vol. 56, 1955. p. 358–362.

[21] Adapted from Walter R. Borg and David Brinks, "Sociometric Choice," *An Evaluation of Ability Grouping*, Cooperative Research Project No. 577. Office of Education, Department of Health, Education, and Welfare. Logan, Utah: Utah State University, 1964. Chapter 7.

☐ In random-grouped classrooms the pupil's ability level appears to be an important factor in determining his sociometric status. Sociometric status patterns differ considerably for pupils of different ability levels in random-grouped classrooms and pupils of higher ability consistently obtain more favorable mean scores.

☐ Sociometric status, accuracy of perceived status, and stability of economic status are essentially unrelated to sex in either random-grouped or ability-grouped classrooms at the intermediate grade levels of the elementary school.

☐ Low, but significant correlations exist between sociometric status, pupil attitude, and self-concept variables. The results, though low, demonstrate the presence of relationships between the pupil's social acceptance and his perception of himself, his school environment, and his peers.

☐ The differences between ability grouping and random grouping did not appear to have any influence upon the pupil's ability to perceive accurately his sociometric status.

☐ The pupil's ability to perceive accurately his sociometric acceptance of others is related to academic ability in both districts—ability and random groupings.

☐ There was a lack of consistent significant differences between boys and girls, which suggests that the effects of ability grouping and random grouping on sociometric variables are about the same for both sexes.

Pupil attitudes

The possible effects of ability grouping on pupil's attitudes toward school has been a major concern of educators who have been interested in employing ability grouping in their schools. The atmosphere in which the pupil finds himself seems to differ considerably in the ability-grouped and random-grouped situation and it differs somewhat at the various levels of the ability-grouped situation. Thus, one might well expect to find differences in the manner that pupils react to and perceive the school environments provided by these treatments. Among the aspects of school adjustment measured in the Utah study are included the pupil's school relationships, his attitudes toward the school, the teacher, his classmates, and problems he perceives in his school experience.

Pupils in the sample which included grades 4, 5, and 6 were administered the *USU School Inventory* during their sixth year. The USU Inventory contains three scales: *Attitude Towards Peers, Attitude Towards the Teacher,* and *Attitude Towards School.* These pupils were also administered the *California Test of Personality* and the *SRA Junior Inventory,* both of which contain scales that appear related to pupils' attitudes toward school.

Results on the *Attitude Towards Peers* scale of the *USU School Inventory* revealed no significant between-treatment differences. The results suggest the following conclusions:

☐ Attitude toward peers was found to be consistently related to ability in the random-grouped classrooms, while no such relationships were found in the ability-grouped classrooms, suggesting that ability is much more important in determining peer attitudes in the random-grouped situations.

☐ There was no relationship between sex and attitude towards peers.

Comparison of mean scores on the *Attitude Towards the Teacher* scale of the *USU School Inventory* showed that superior girls and boys and slow boys in District A received significantly more favorable scores than comparable District R pupils. From these data it may be concluded that:

☐ Ability grouping appears to cause more favorable attitudes towards the teacher than random grouping for superior and slow pupils.

☐ There was some tendency in District A for slow pupils to have more favorable attitudes towards the teacher than average pupils; this thus supported the conclusion that ability grouping has a favorable effect upon the attitudes of slow pupils toward their teacher.

Comparisons between the two districts on the *Attitude Towards School* scale showed one significant difference favoring slow boys in District A.

It may be concluded that:

☐ Boys of low ability developed more favorable attitudes toward school in ability-grouped classrooms than in random-grouped classrooms.

☐ Superior pupils had more favorable attitudes toward school in both treatments than pupils of lower ability.

☐ Superior girls had more favorable attitudes toward school in both districts than boys of comparable ability.

Self-concept

The extent and consistency of the *Concept of Self* data seem to justify the conclusion that pupils in random-grouped classrooms tend to obtain more favorable *Concept of Self* scores than comparable pupils in ability-grouped classrooms, at all ability levels. The data also appear to support the conclusion that the two grouping treatments had a somewhat greater effect upon girls than boys.

When we consider all results relative to acceptance of self obtained in this study, a consistent pattern favoring random grouping emerges. This pattern is more pronounced for superior and average pupils but is present to a lesser degree for the slower pupils. Based on these data, it must be concluded that random grouping is consistenly related to higher self-acceptance for pupils at all ability levels and over most of the grade levels covered in this project.

Self-concept changes accompanying ability level changes in ability grouping

Pupils who changed ability levels between the fifth and sixth grade and pupils who changed ability levels between the sixth and seventh grade administration were compared to determine whether changes in ability classification would be accompanied by changes in the self-concept variables. From the results of these analyses it may be concluded that:

☐ Placement of a pupil in a lower ability classification appears to bring about lower scores in *Concept of Self, Acceptance of Self and Ideal Self scales.*

☐ The IAV (Index of Adjustment Values) scores of girls assigned to a lower ability group appear to be more drastically affected than are the scores of boys under the same circumstances. This may reflect the tendency for girls to place a higher value on academic achievement and status.

☐ Pupils destined to be reassigned to a lower ability classification show lower scores in *Concept of Self* and *Acceptance of Self* prior to reassignment. This lower initial score may indicate that misassignment of a pupil to a higher group than his ability would justify brings a lowering of his *Concept of Self* and *Acceptance of Self* because of his inability to perform satisfactorily in his assigned group.

☐ Remaining in the same ability classification in an ability grouping system appears to be less threatening to the pupil's self-concept than reclassification to either a higher or lower section. Reclassification to a higher section may lead to a slight loss in the pupil's self-concept because he is probably near the bottom of the ability range in his new group. The effect upon pupils assigned to a lower ability group, however, appears to be much greater. These pupils may lose self-concept because of their initial misassignment. Their self-concept is further lowered, especially for girls, when they are confronted with the stigma of identification with a lower ability group.

Whether the lower scores on the self-concept variables, occurring rather consistently in the ability-grouped samples, are considered "good" or "bad" depends on one's point of view. Considering them in the light of psychological research in related areas such as aspiration level, however, the authors must conclude that the apparent effects of ability grouping upon the self-concept variables emerging from the Utah study are probably harmful to the development of at least some of the pupils who are educated under such a system of grouping.

Personality

Although many of the arguments heard on the merits and demerits of ability grouping imply that this practice can have an effect upon the personality development of pupils involved, very little direct research evidence comparing the personality characteristics on pupils in ability- and random-grouping systems has been published. In a search for answers to some of the questions raised about the effects of grouping methods on personality development, this research examined some of the factors involved.

The California Test of Personality was administered to one sample of pupils *only*. The results may be accepted with less confidence than those obtained from measures administered to two or more samples. Results showed random-grouping subgroups to be consistently higher on this score at all ability levels. These data suggest that ability grouping does not lead to a greater feeling of belonging on the part of pupils at any ability level but instead provides a less favorable climate than random grouping. Within-treatment comparisons on this variable showed a consistent trend in both districts for pupils of higher ability to obtain more favorable scores. It may be concluded that the pupil's feeling of belonging as measured by the *CTP* is more closely related to ability level than to the type of grouping treatment.

Two aspects of the study were concerned with measurement of specific personality variables using a projective approach. The first phase, referred to as the fifth-grade study, measured aggression, depression, and inferiority feelings on an individually administered TAT-type projective measure, using a sample of 144 slow pupils taken from ability-grouped and random-grouped fifth-grade classes. The second phase, referred to as the sixth-grade study, employed a similar group-administered projective measure as well as measures of anxiety, using a sample of 338 slow, average, and superior pupils taken from ability-grouped and random-grouped sixth-grade classrooms.

Between-treatment comparisons on aggression, depression, and inferiority feelings in the fifth-grade study showed no statistically significant differences. Between-treatment differences on the three personality variables obtained in the sixth-grade study from a group projective measure also failed to show significant differences between slow pupils on these three personality variables, except that slow girls in District R (random) obtained significantly higher scores on depression. District R slow girls in the fifth-grade study also showed higher depression scores although the difference was not significant.

A summary of conclusions follows:

☐ Ability grouping and random grouping do not differentially affect the scores of slow pupils on aggression, depression, and inferiority feelings excepting a tendency for slow girls in random-grouped classes to show higher levels of depression than slow girls in ability-grouped classes. The results present ***strong*** evidence that ability grouping as employed in the Utah study does not cause the development of inferiority feelings among slow pupils.

☐ The projective data obtained in the sixth-grade study at all ability levels failed to support the contention that aggression and depression are higher in random-grouped classes for superior and slow pupils because of the frustration encountered by these pupils in a program geared for the average. The most logical conclusion would be that the variables examined here are not influenced by the ability-grouping or random-grouping treatments employed in the Utah study.

☐ Although there was no significant relationship between aggression and depression as measured in this study, both aggression and depression were positively correlated with inferiority feelings. These data suggest that both aggression and depression may be partially expressions of feelings of inferiority which boys more frequently show through aggression and girls through depression.

The two grouping treatments have no differential effect upon pupil anxiety at any ability level in either the ability-grouped or random-grouped classrooms.

Correlations computed in the study of fifth-graders between achievement and aggression suggest that the ability-grouping situation provides some frustrations for pupils whose ability places them near the top of the slow group. On the other hand, in random-grouped classrooms the correlations between depression and achievement scores suggest that pupils at the bottom of the ability distribution in such classrooms tend to be more depressed.

Level differences showed higher depression scores for superior boys and higher inferiority scores for boys and girls in District A (ability grouping), while no such differences emerged in District R (random grouping). It may be tentatively concluded that superior girls in District A were adversely affected by the change from an easy competitive situation in their first years of schooling in random-grouped classes to the more difficult competitive situation in ability-grouped classes.

D. *Grouping Children Identified as Exceptional*

Some investigators have concentrated their efforts in examining different ways of grouping children identified as exceptional. Examples follow.

The slow learner

The extent to which helping slow learners achieve their best is actually more difficult than helping others make the best use of their potential is difficult to say. However, teachers have always been concerned with our less rapid learners, and as Lloyd Dunn[22] tells us, teachers are frequently expending an undue proportion of time and energy on behalf of slow learners because unrealistic goals are set for these pupils. Most of our present-day educational procedures are based on tradition and philosophy rather than scientific evidence. Nevertheless, we know how to do a better job than we are presently doing to help the slow learner.

According to Good's Dictionary of Education, the slow-learning child is one "who though capable of achieving a moderate degree of academic success, will do so at a slower rate with less than average efficiency."

In accord with the observation of leaders in the field, it seems apparent that many of our slow learners are lacking in curiosity, creativity, and critical thinking as these factors apply to schoolwork. Whether such lacks are as much the results of stifling experiences in the school, home, and community environment as they are manifestations of a limited capacity to learn is difficult to determine.

Although slow rate of academic learning seems to be the only characteristic that all children generally identified as slow learners have in common, recent studies show that many of them are acquiring certain traits out of harmony with the concepts of democracy as discussed earlier in this paper. Apparently the kinds of learning opportunities which these learners found accessible were not of the kind which served to maximize their growth potential in a desirable direction.

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[22] Adapted from Lloyd M. Dunn. "The Slow Learner—An Overview," *NEA Journal,* Vol. 48, October 1959. p. 19–21.

Examples from a report by Lloyd Dunn[23] follow:

> The few studies which have been conducted indicate that over one-half of our slow learners are poorer in personal and social adjustment than brighter students; they tend to be rejected by their peers usually because of their aggressive and unacceptable behavior. They are a "marginal group" who have a failure-oriented self-concept and who have difficulty in growing up.
>
> Many slow learners are discipline problems in school and potential delinquents in society...
>
> While most slow learners (especially the boys) react to school failure by agression, some become withdrawn...
>
> Providing them with success experiences and restoring them to better adjustment is a complex assignment. Extreme cases will require psychology and psychiatric attention. But, while most slow learners have personality problems, some are amazingly relaxed, pleasant, and well adjusted in spite of repeated school failure.

Whether the school opportunities for learning could have been different for the slow learners referred to above we do not know. However, it seems reasonable to assume that school personnel and others need more knowledge and greater understanding not only of the particular children involved but of the available research about learning and the nature of the human organism. Greater knowledge about such factors might have made a desirable difference in the kinds of learning opportunities provided for them.

Does grouping make a difference in helping slow learners learn? As indicated throughout this survey, the evidence is inconclusive. Some studies show gains in favor of ability or achievement level grouping, others in favor of heterogeneous grouping. The report that follows illustrates success in a homogeneous grouping situation.

Gordon Liddle and Dale Long[24] report the gains made by a group of slow learners in a small classroom set up for children from culturally deprived backgrounds who had been unsuccessful in the first grade. Intelligence quotients ranged from 77 to 118; the mean was 92. Most of the children were below average in intelligence as measured by standardized tests but well within the normal range. Aided by the resources provided by the Quincy Youth Development Project (a 10-year action research project of the Committee on Human Development of the University of Chicago), teachers in the school located in a low income area began studying the children who had repeated one of the primary grades. The faculty had discovered that the policy of holding back pupils who are not ready for the school's next-grade expectations was not in itself an answer to the problem of what to do for children who are not meeting so-called grade standards. The key to the problem, the faculty thought, was to find each pupil's place on the ladder of learning, group him with his fellows, and help him to the next rung. What we teach and what we do, these teachers said, must stem from an intimate familiarity with each pupil. It was hoped that through improved communication between teacher and child and between teacher and parent, ways would be found to motivate the children for education and to individualize instruction so that each child might make better use of his potential than had previously seemed possible.

And so in September 1956, an experimental room for a group of these children with one teacher in charge was set up. Eighteen children were selected for the experimental room, six of whom had been passed into the second grade on trial. The other 12 children were scheduled to repeat the first grade.

The program for these children included early home visits by the teacher to tell the parents why the combination class of first- and second-grade children had been set up. These home visits also helped the teacher get a better understanding of the home background. As the authors[25] report:

> The children seemed pleased to have their teacher come to talk with their parents. These early home visits gave the child the feeling that the teacher was interested in him....
>
> In this type of neighborhood, it is most important that the teacher be a warm, accepting person. Many of the parents of these children have themselves been unsuccessful in school.... The early parent-teacher interview served to strengthen parent-teacher solidarity. The visits made subsequent meetings of parent and teacher more frequent and more fruitful, demonstrating anew to the child that the parent and the teacher were working together for his welfare. This united front made disci-

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[23] Ibid.

[24] Adapted from Gordon Liddle and Dale Long. "Experimental Room for Slow Learners," *The Elementary School Journal*, Vol. 59, December 1958. p. 143-149. Copyright 1962 by the University of Chicago.

[25] *Ibid.*, p. 144.

> pline less necessary and, when necessary, less of a problem . . .

Classroom activities were much like activities in other classrooms except that the teacher stressed phonics more and used a wider variety of reading materials. The children were taken through a curriculum not very different from the regular program of the school for the early grades, but at their own speed. Some of the children stayed in the experimental room 2 years before entering the regular third-grade class. Others went on into the third grade at the end of the first year.

In May of the second year, Metropolitan Achievement Test scores, in reading, for example, showed a mean grade score of 2.9, a growth of about 1.75 years in less than 2 school years.

Relative to other results of this experiment, Liddle and Long[26] report in part as follows:

> . . . The children in the experimental room seemed happy and eager to learn. Their contentment led the parents to accept the room. When the children went home with a feeling of accomplishment, happy about their school day, the parents caught the feeling . . .
>
> . . . the children as a group made gains in 9 of the 12 areas of the test (California Test of Personality). Their sense of personal worth had been enhanced. They had a stronger feeling of belonging. Their social skills had improved. They showed greater freedom from antisocial tendencies. Both family and school relations had improved.
>
> However, there was essentially no change on the social standards score. . . . these children know what society's standards are. The self-reliance score also remained above average. Perhaps the "every man for himself" environment in which many of these children lived had made them fairly self-reliant. In the second year, the children as a group had slightly lower scores on freedom from nervous symptoms.
>
> The second time the test was given, only one child scored lower in personal and social adjustment as measured by the test. Seven remained essentially the same, and seven children showed considerable improvement . . .

The teacher's attitude toward her pupils, the authors believe, had much to do with the children's academic and psychological improvement. Much importance was attached to the teacher-pupil conferences. The teacher talked individually with each child about his school progress, his problems, and his interests.

A concentrated effort should be made to reach and educate the community's unsuccessful families, the authors of this article contend. A few families produce large numbers of slow-learning children, juvenile delinquents, and unsuccessful adults. In most of these families, the parents dropped out of school at 15 or 16 years of age after an unhappy and unsuccessful experience. They are frequently bitter, unhappy people. In closing the article, the authors say:

> Until we can help children from such families to be happy children whose academic and emotional needs are being met, we will continue to raise generations of unsuccessful families, families whose problems demand a lion's share of the time and effort of the community's educational, social work, and relief agencies. We know from experience that many of these troubled families can be more helpful to their children. Often a friendly approach by the school can make a vast difference in the lives of these boys and girls—in school and out.

The mentally retarded

J. Wayne Wrightstone[27] reports a 2-year study of children in New York City in which he compared educational changes of mentally retarded children enrolled in an experimental two-track program with changes of matched mentally retarded pupils enrolled in a one-track program. Homogeneously grouped and heterogeneously grouped children with retarded mental development were compared in the areas of academic achievement, motor coordination, speech, personal and social adjustment, health habits, attitudes, activities and interests, and peer acceptance. The reorganized plan was designed with two tracks upon which to channel mental retardation: a high educable track for pupils with the most educational potential and a low educable track for the less promising.

In reporting the results of this study, Wrightstone[28] concludes that the available evidence cannot weight the balance wholly in favor of either homogeneous or heterogeneous grouping. Despite the fact, however, that direct measures of pupil growth in various areas do not yield a clear trend, participating teachers and supervisors generally favor the two-track (homogeneous grouping) plan. Wrightstone also reports, in general, the findings of this study tend to be in accord with 15 of the 33 experimental studies of homogeneous grouping reviewed by Ekstrom.[29] The 15 studies found no differences in achievement in homogeneous or heterogeneous groups, or where homogeneous grouping was detrimental. On the other hand, 13 of these studies found differences favoring homogeneous grouping, and 5 reported results partially favorable and partially unfavorable to homogeneous grouping.

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[26] *Ibid.*, p. 146.

[27] J. Wayne Wrightstone; George Forlano; J. Richard Lepkowski; Marvin Sontag; J. David Edelstein. *A Comparison of Educational Outcomes Under Single-Track and Two-Track Plans for Educable Mentally Retarded Children.* (A Cooperative Research Project, No. 144 of the Office of Education, conducted by the Board of Education of the City of New York, through the University of the State of New York.) 1959.

[28] *Ibid.*

The Gifted

There has been a steadily increasing pressure for special attention to be given to the most rapid learners, especially those identified as the academically gifted. Some people claim that schools are too easy, that they are geared to the average and wasteful of the brilliant. Adequate and accurate information about the extent to which schools are accomplishing their objectives is difficult to come by. It is generally known, however, that schools vary in their teaching practices and in the quantity and quality of the learning opportunities provided. Teachers vary in the extent to which they succeed in meeting a wide range of individual differences among children. But just as a special concern for helping slow learners achieve their best has developed, there is a growing concern in the lay public and within the profession that the learning opportunities for the rapid learners must also be improved to maximize their growth potential.

"And then came Sputnick!" as Wilhelms[30] puts it.

> With the surge of fear came a kind of absolute impatience that made most of the thoughtful reservations seem, to much of the public, like mere academic quibbling. To many minds, the extreme demands upon science and technology made any kind of goodness except intellectual brillance near-irrelevant. Their solution appears simple: Identify the intellectually brilliant as early as you can and push them as hard as you can along intellectual lines.

The following reports may be useful as we search for sound answers to some of the questions involved.

The use of standardized achievement and intelligence test scores have been among the major indices of identifying rapid learners. Inadequacies in the use of such scores have been recognized, however. Van R. Holsey[31] of Amherst College reports:

> Admissions officers are becoming leery of test scores and marks as a means of assessing a student's potential. Unfortunately, there are no adequate tests that can measure motivation, determination, eagerness to learn, curiosity, and imagination which are human ingredients necessary for a meaningful and fruitful college experience.

Vincent J. Schaefer,[32] a collaborator of the late Nobel Laureate Irving Langmuir, in writing about a summer session in science for 30 high school students selected on a nationwide basis, says:

> I believe it is a mistake to segregate the so-called superior students. After all, he will have to live his life in a community made up of all types of individuals. Good students, given intellectual challenges suitable to occupy their minds, will be able to accept the slower progress of their less agile schoolmates.

"Again it has been demonstrated," says Alice Miel,[33] "that the act of grouping does not alone do the teaching. The nature of the teaching and the factors influencing quality of learning opportunities must be improved if any type of student is to benefit from any plan of classification."

Dr. Abramson[34] reports findings of a current study:

> . . . there is evidence from a careful study in New York City high schools that academically gifted pupils achieve no more in the same subjects when segregated in special classes or special schools than when educated in regular schools and in heterogeneous classes.

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[29] Ruth B. Ekstrom. *Experimental Studies of Homogeneous Grouping: A Review of the Literature.* Princeton, New Jersey: Educational Testing Service, April 1959. p. 1–26.

[30] Fred T. Wilhelms. *The Nature of Classroom Grouping for Learning.* Background for ASCD discussion group H–7, 1958. p. 18.

[31] Van R. Holsey. "Identification and Education of the Academically Talented Student in the American Secondary School," *Current Issues in Higher Education,* August 1958. Washington: National Education Association.

[32] Vincent J. Schaefer. "The Boy Who Learned to Grow Salt," *Saturday Review,* December 12, 1959. p. 54.

[33] Alice Miel. Reprinted by permission of the National Committee for Children and Youth, copyright holders, from "Trends in Curriculum, Teaching and Guidance." *Children and Youth in the 1960's,* Survey Papers, prepared for the 1960 White House Conference on Children and Youth. Washington: Golden Anniversary White House Conference on Children and Youth, Inc., 1960. p. 118.

[34] David A. Abramson. "The Effectiveness of Grouping for Students of High Ability," *Educational Research Bulletin,* Vol. 38, 1959. p. 169–182.

Two recent studies (Gallagher[35] and Williams[36]) showed that the moderately gifted child is highly acceptable to his peer group and that the bright child does not limit his choice of friends to equally gifted peers.

Horace Mann[37] analyzed the acceptance and rejection patterns of elementary school children in the Colfax School, Pittsburgh. Acceptance and rejection seemed stronger within an ability grouping than across groups. However, the findings showed no adverse effects on the personal or social behavior of gifted children.

Torsten Husen[38] discusses selective school systems in Sweden. He reports that the dual-track system reflects family social status, and since selection is made at an early age, a large amount of talent is lost. Children from lower status homes either do not apply for college preparatory schools, even though they possess the requisite ability, or they receive less motivational support from parents. It is not self-evident that failure in the various selective or dual school systems is to be explained mainly by lack of ability.

Husen, in 1945, 1946, 1947, compared those in a total age-cohort reaching the school-leaving examination of the realskola with those leaving school. The failure rate is high and entails considerable loss of talent. It is a system in which at least a fourth of the pupils carefully selected for the lower secondary school drop out—mainly due to inability to meet the demand put upon them. Another 25 percent repeat grades. Such a system must have failed by a large margin in meeting needs of high-quality pupils.

When commending high intellectual standard of selective secondary schools, continues Husen, the price paid in wastage of talent must be considered. Whether the outcome is worth the price is another question.

The gifted underachievers

The investigations[39] of the Talented Youth Project of the Horace Mann-Lincoln Institute of School Experimentation of Teachers College, Columbia University, have been concerned with an approach to the study of the underachiever—rarely found in the literature—a study of self-concepts and the ideal concepts of these students.

Evaluation of the first 2 years of the experimentation made it increasingly clear that academic underachievement is a symptom of a wide variety of basic personal and social problems and that the depth and seriousness or duration of the underlying problem determine the extent and kind of help a student needs. For those students for whom it is possible to effect improvement, two factors appear to be crucial: (1) identification with a teacher who is consistently interested and supportive and who views each student as an individual and accepts him as a bright and able person with a need for special help; and (2) assistance in mastering skills of learning which many of the underachievers failed to acquire in the earlier grades.

The experimenters set out to test the hypothesis that if underachievers could share their common problems with other similar students and identify with an understanding teacher, their attitudes toward school and their scholastic performance would improve. Bowman[40] reports that in evaluating the outcomes of the study, however, the experimenters seemed to agree that it was not wise to group underachievers together in the same class because they tend to give each other negative support rather than positive.

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[35] James J. Gallagher. "Peer Acceptance of Highly Gifted Children in Elementary School," *Elementary School Journal,* Vol. 58, May 1958. p. 465–470.

[36] Meta F. Williams. "Acceptance and Performance Among Gifted Elementary School Children," *Educational Research Bulletin,* Vol. 37, November 1958. p. 216–220.

[37] Horace Mann. "How Real Are Friendships of Gifted and Typical Children in a Program of Partial Segregation?" *Exceptional Children,* Vol. 23, February 1957. p. 199–201.

[38] Torsten Husen. "Loss of Talent in Selective School Systems: The Case of Sweden," *Comparative Education Review,* Vol. 4, October 1960. p. 70–74.

[39] Adapted from Miriam Goldberg. "Studies in Underachievement Among the Academically Talented," *Freeing Capacity to Learn.* Washington, D.C.: Association for Supervision and Curriculum Development, 1960. p. 56–73.

[40] See Paul H. Bowman. "Personality and Scholastic Underachievement," *Freeing Capacity to Learn.* Washington, D.C.: Association for Supervision and Curriculum Development, 1960. p. 53.

Chapter III

Ability Grouping

A. *Broad, Medium, and Narrow-Range Classes*

Among the most comprehensive investigations on the effects of ability grouping is a comparative study of broad, medium, and narrow range classes conducted by Miriam Goldberg[1] in 45 elementary schools of New York City.

The study was designed to explore differences in achievement and learning patterns, social and personal relations, interests and attitudes toward self and toward school of intermediate-grade children when grouped in classes with various ranges of intellectual ability.

The investigation involved 86 classes which were organized at the beginning of fifth grade and remained intact to the end of the sixth grade. The pupils were divided into five ability levels on the basis of IQ scores and classes were constituted to represent all possible combinations of these ability levels. Each class fitted one or another of 15 patterns ranging from narrow to broad —gifted, very bright, bright, high average, low, and below average and lower.

The population with which the study was finally concerned included the 2,219 children who were still in their original classes at the end of the sixth grade. Most of the 86 classes in the study had 2 different teachers, 1 in the fifth grade, the other in the sixth.

In order to derive as complete a picture as possible of the development of the pupils, a variety of testing instruments[3] were used: (1) Academic achievement in reading, arithmetic, language arts, and work-study skills, *Science Research Associates* (SRA) *Achievement Series* (Grades 4–6); (2) Academic achievement in science and social studies, *Stanford Achievement Tests* (Intermediate Level); (3) Interest, *SRA What I Like To Do Inventory;* (4) Attitudes toward self, *How I Feel About Myself Inventory;* (5) Attitudes toward more and less able pupils, *Describing a Pupil Check List;* (6) Attitude toward school, *What I Like To Do* questionnaire; (7) Teacher appraisal, *Teacher Rating Form* (adapted from Terman); (8) Social acceptance, *Ohio Social Acceptance Scale* (modified); (9) Leadership status (same as above); (10) Creative expression, a poem and story written by each pupil.

The instruments were administered at the beginning of the fifth grade and again at the end of sixth grade.

The 15 patterns were studied in various combinations to isolate the effects of the gifted pupils on the rest of the pupil population, the effects of ability range, and the effects of relative position. Goldberg[4] reports:

> Three general null hypotheses were tested: (1) The presence or absence of the extreme ability levels (gifted and slow) has no effect on the changes in performance of the other ability levels. (2) Narrowing the ability range in the classroom has no effect on changes in the performance of the pupils. These hypotheses were tested for five major variables: (a) academic achievement, (b) attitudes toward self, (c) interests and attitudes toward school, (d) assessment of more and less able peers (using stereotyped characters), and (e) teacher rating of pupils.

A summary of findings follows:

Academic achievement.—Both the gifted and the slow had varying but significant effects on the achievement gains of the other pupils.

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[1] Miriam L. Goldberg and others. ***The Effects of Ability Grouping: A Comparative Study of Broad, Medium and Narrow Range Classes in the Elementary School,*** (First Draft). New York, N.Y.: Horace Mann-Lincoln Institute of School Experimentation, Teachers College, Columbia University. 1962. 87 p. (Interim Report)

[2] *Ibid.*, p. 2–16.

[3] *Ibid.*, p. 2–9 to 2–10.

[4] Adapted from Miriam Goldberg and others. ***The Effects of Ability Grouping: A Comparative Study of Broad, Medium and Narrow Range Classes in the Elementary School.*** New York, N.Y.: Horace Mann-Lincoln Institute of School Experimentation, Teachers College, Columbia University. Chapter VIII.

In science the presence of gifted pupils had a consistently upgrading effect. In every instance where gifted pupils were present, all the other ability levels made greater gains than in classes where the gifted were absent. In social studies the presence of the gifted had an upgrading effect only on the achievement of very bright and bright pupils, and this only when there were less able pupils present. In all other subjects, the presence of the gifted was not consistently upgrading nor down-grading. In reading, language and work-study skills, the effects of the presence of the gifted are minimal.

The presence of the slow pupils had a consistently upgrading effect on the arithmetic achievement of all the other pupils. In the other academic areas, the effect of their presence on the brighter pupils was generally neutral, although the gifted and the average levels were negatively affected by their presence in language and science, respectively. Only the reading achievement of the bright pupils was positively affected by the presence of the "slow" level.

The null hypothesis relating to effects of presence or absence of extreme groups on academic achievement was partially rejected.

Analyses were made of the various narrow- and broad-range patterns with the following results:

A comparison was made between the broadest pattern in which all ability levels were represented with the five narrowest range patterns, in which each of the ability levels was alone. Except for the gifted (IQ 130 and above) for whom average increment in the narrow-range class was slightly higher than in the broadest range classes, each of the other ability levels showed slightly greater increments in the broadest range than in the narrower range classes. However, few of these differences were large enough to be considered educationally important.

In order to compare all 5 ability levels in similar range situations, the 15 patterns were collapsed into 3 range categories—narrow, medium, and broad. Achievement increments for each ability level in each range were analyzed. When the three ranges were compared, the broad-range patterns were consistently superior to the narrow in all subjects, except reading. In social studies, arithmetic reasoning, arithmetic computation, and total average, the broad-range classes were also superior to the medium-range classes.

When the five ability levels were considered together, the broad-range grouping seemed to be consistently related to greater increments than either of the other two situations in most of the subject areas in which range had an effect on achievement. However, for any one ability level the differences were generally too small to be educationally significant.

The null hypothesis related to the effects of ability range on academic achievement was rejected. Generally, achievement increments were greater in broader than in narrower ability ranges.

Each of the three intermediate groups was viewed in five positions: alone, down-graded, up-graded, equilibrium, and broad. Comparisons between achievement gains in the various positions for any one ability level revealed the following:

Only in social studies and arithmetic computation were there significant differences due to position—the alone and the broad positions were related to greater gains for each ability level than were the up-graded, down-graded, or equilibrium patterns.

The null hypothesis relating to the effects of position could be only partially rejected. In general, no one position was consistently superior to any other for all ability levels in all subjects.

Even when achievement differences due to ability, range, and relative position had been accounted for, a considerable portion of the differences in individual achievement growth still remain unexplained.

For every ability level in every pattern and for each subject there was great variability from class to class. In some instances, in two separate classes within a given pattern, the difference in achievement increments between pupils of comparable ability was as much as four and one half years. On the average, for pupils of equivalent ability, the difference between highest and lowest class in any subject was more than a full year.

So great were the differences from class to class that they often exceeded the achievement differences due to ability. In social studies, science, and arithmetic computation, there were instances where the gains made by a single ability level in one class differed more from the gains made by comparably able pupils in another class (in the same pattern) than they did from gains made by more or less able pupils in their own classes.

Ability groupings and self-attitudes[5]

In general, the presence of the gifted resulted in improved self-attitudes for the brighter pupils, less positive appraisals for the slow ones, and little effect on the average students.

The effects of the presence of the slow pupils varied from one area of assessment to another and from one ability level to another. Their presence was associated with higher expectations of academic success on the part of the very bright and the average pupils, but with lower success expectations on the part of the gifted.

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[5] Adapted from Miriam Goldberg, *The Effects of Ability Grouping: A Comparative Study of Broad, Medium and Narrow Range Classes in the Elementary School.* New York, N.Y.: Horace Mann-Lincoln Institute of Experimentation, Teachers College, Columbia University (Interim Report). Chapter VIII, p. 11.

The hypothesis relating to the effects of the presence/absence of gifted or slow pupils on changes in self-attitudes of the other students was partly rejected.

The ability range in the classroom was significantly related to self-attitude changes. For all five ability levels taken together, the broad-range pattern showed mean score increases significantly different from the average decreases observed in both the narrow- and medium-range patterns.

The intermediate ability levels raised their self-estimates significantly higher in the broad- than in the narrow-range patterns. The gifted pupils raised their self-high estimates but not significantly. However, the slower pupils reversed this by showing an increase in the narrow-range patterns and a decrease in the broad-range.

Changes in expectations of academic success were significantly, but not consistently, affected by ability range. The slower pupils raised their expectations in narrow- and medium-range classes and lowered them in broad-range classes. The bright pupils reversed this tendency, lowering expectations in the narrow and medium range and raising them in the broad-range patterns. The gifted group seemed to do equally well in the narrow and broad ranges and less well in the medium range.

The null hypothesis that the self-attitudes of the pupils would not be affected by the ability range in the classroom was generally rejected. The range of ability had significant though variable, effects on the self-attitudes of the pupils in the several ability levels.

In general, high or low self-ratings by one ability level in a classroom were associated with comparable ratings by all other levels.

No one combination of patterns was consistently associated with positive changes in all of the self-attitude measures. For all the measures combined, the broadest range pattern, in which all ability levels were represented, showed the greatest overall gains, while the combination of all five simple level patterns showed the greatest losses.

Ability grouping in relation to interests and attitudes toward school and peers[6]

Grouping seemed to have no consistent predictable effects on either student interests or their attitudes toward school. For all ability levels, interests in all areas measured, except music, decreased during the 2-year period. This was especially true of interest in science and social studies. No one range or combination of patterns appeared to be consistently more effective in maintaining interests or in improving attitudes toward school than any other.

The null hypotheses relating to the effects of the extreme ability levels or the ability range on interests and attitudes toward school were accepted.

In general, pupil attitudes toward peers of varying levels of ability and effort as reflected in the ratings accorded five stereotypes remained relatively stable over the 2-year period. The changes that occurred showed little consistent relationship to grouping patterns.

General conclusions[7]

The general conclusion which must be drawn from the findings of this study is that in predominantly middle-class elementary classrooms, like the ones used in this study, narrowing the ability range in the classroom on the basis of some measure of general academic aptitude, will, by itself, in the absence of carefully planned adaptations of content and method, produce little positive change in the academic achievement of pupils at any ability level. However, the study found no support for the contention that narrow-range classes are associated with negative effects on self-concept, aspirations, interests, attitudes toward school, or other nonintellectual factors. It may be that various kinds of grouping and regrouping can be used effectively if they are designed to implement planned variations in content and method.

Value of grouping depends upon the way in which it is used. Where it is used without close examination of the specific learning needs of various pupils and without recognition that it must *follow* the demands of carefully planned variations in curriculum, grouping can be, at best, ineffective, at worst, harmful. It can become harmful when it lulls teachers and parents into believing that, because there is grouping, the school is providing differentiated education for pupils of varying degrees of ability, when in reality that is not the case. It may become dangerous when it leads teachers to underestimate the learning capacities of pupils at lower ability levels. It can also be damaging when it is inflexible and does not provide channels for moving children from higher to lower ability groups either from subject to subject or within any one subject as their performance at various times in their school career dictates.

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[6] *Ibid.*, p. 14.

[7] *Ibid.*, p. 27.

It is on the differentiation and appropriate selection of content and method of teaching that emphasis must be placed. Grouping procedures can then become effective servants of the curriculum. Otherwise, grouping arrangements serve little educational purpose.

Ability grouping and teacher effectiveness[8]

The widely held assumption is that by narrowing the range of intellectual ability in a classroom, the pupils will benefit. It is often maintained that when the range is narrowed, the teacher can more readily adapt both content and method to the abilities of the children and the children face more realistic criteria against which to measure themselves. They compete with their peers, so to speak; they do not have to compare their own achievement with that of far brighter or far duller pupils. Dr. Goldberg examined the evidence in light of assumptions about ability grouping and teacher effectiveness. The general conclusion is that merely narrowing the ability range in the classroom does not necessarily result in greater differentiation of content or method and is not associated with greater academic achievement for any ability level.

Teachers in this study did not generally adjust the content and method of their teaching to any greater degree when confronted by narrow rather than broader ranges, since no ability level consistently showed greater growth in classes of narrow as compared to broad ability range. When such adjustments were apparently made, or in the case of the narrow-range classes for slower pupils, there was a tendency to teach less of certain subjects to slow pupils than to bright groups or to the broad-range classes. It would appear that for the lower ability levels, narrowing the range led teachers to set lower standards. Yet, pupils of comparable ability in the broad-range classes appeared to benefit from exposure to content probably intended for brighter pupils—an advantage shown by the greater increments of low-ability pupils in science and vocabulary in broad- as against narrow-range classes.

This study, however, cannot shed light on the effectiveness of ability grouping where specific consistent curricular adaptations are made or where pupils are entered into classes on the basis of specific aptitudes or for purposes of covering a course of study not normally taught in a particular grade.

The investigation of teacher effectiveness in teaching several ability levels revealed some provocative findings, though not related to the basic hypothesis of the study. The impact of the teacher's interest and/or competencies is seen in the class-by-class analyses across various subjects and for various ability levels.

Some teachers handling several ability levels were more effective than other teachers handling a single ability group. The variation among classrooms was far greater than the variation among patterns when pupil ability was held constant. Those classes which showed greatest progress in one subject were not generally the ones which showed greatest progress in other subjects. Teachers seemed to emphasize one or two content areas more than others and the area of emphasis bore little relationship to the initial status of the pupils. Gains were not necessarily greater in either area of initial deficiency or strength, but instead seemed to be related to factors within the teachers. Although there were some teachers who did well in all subjects and others who did poorly, most teachers achieved better results in one or two subjects than they did in others.

Using pupil achievement as a measure of teacher effectiveness it was possible to determine (a) the extent to which "strong" teachers of one subject were also "strong" teachers of all other subjects, and (b) the extent to which teachers who were successful with one ability level were also successful with other ability levels. Among the findings suggested were:

☐ Some teachers were more successful than others in the general attainment of all pupils across several subjects and ability levels.

☐ Most teachers were more successsful in handling several ability levels in one or two subjects than they were in handling all subjects for a particular ability level.

☐ It was more difficult to achieve comparable results in several subjects for the brightest, the least difficult, the slowest pupils.

☐ Some subjects such as arithmetic and social studies were more readily taught with comparable results to several ability levels simultaneously than was a subject such as science.

Teacher ratings of students tended to be highly intercorrelated, indicating the operation of a "halo effect" influenced by the intellectual ability of the pupils. The single consistent finding was that the teacher ratings on all the indices and on the total scale varied inversely with ability and achievement so that there was a consistent positive relationship between the pupil's ability and the teacher's rating not only of his intellectual functioning, but also of his personal, social, and work characteristics.

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[8] Adapted from Miriam Goldberg and others. *The Effects of Ability Grouping: A Comparative Study of Broad, Medium and Narrow Range Classes in the Elementary School.* New York, N.Y.: Horace Mann-Lincoln Institute of School Experimentation, Teachers College, Columbia University. 1965. Chapter VIII.

B. *Joplin Plan*

A major characteristic of the Joplin Plan is that children from several grades, approximately on the same level of reading ability, are brought together for a designated period each day for a program of reading instruction especially planned for pupils of approximately the same level of reading achievement. The assumption is that a teacher can more nearly meet the needs of pupils in his class if the range of individual differences in reading ability is limited as much as possible to a single level. Based on a preliminary report by Cecil Floyd,[9] a brief review follows, evaluating the plan as established in Joplin, Mo., 1952–53.

> The Iowa Every Pupil Test of Basic Skills, Test A, Silent Reading Comprehension, Form L, Grades 3–5 and Grades 5–9, were administered. To establish the reading level of each child, test results previous school records, teachers' knowledge of children, and cumulative record data were considered. Provision was made for nine groups which included children in grades 4, 5, and 6. The groups were established by reading grade range from 1.1 to 9.2. Materials for all levels of readability were provided.
>
> A previous practice of assigning marks in reading was discontinued and replaced by teachers' comments and suggestions on a child's progress in word skills, oral reading, silent reading, number of recreative and supplementary books read. Parents were encouraged to comment.
>
> Two weeks before the end of the semester, Form M of the Iowa Every Pupil Test of Basic Skills was administered. Results showed that almost all students had made gains in reading. Reactions from parents, teachers, and pupils were favorable.

The Joplin plan (initiated in a town by this name) or similar plans of organizing groups of children from several grades for reading instruction on the basis of sameness in reading achievement is also used in other school systems. But, as Elmer Morgan and Gerold Stucker[10] report:

> While many of the school systems using this plan claim superior results at the middle grades, there appears to be no published statistical research to validate these claims.

The research[11] described here was designed to determine whether the Joplin plan of grouping for reading would produce significantly superior results where teachers have been randomly assigned to experimental and control groups, and where sex, method, IQ, and initial reading ability have been carefully controlled.

The sex, IQ, and initial reading characteristics were obtained of 90 matched pairs (out of a total population of 226) of fifth- and sixth-grade children of a rural consolidated school in the county, who could be successfully matched on 2 different measures of initial reading ability—the Durrell-Sullivan Form A and California, 1957 W Series, reading achievement tests.

The children in each grade were divided into fast and slow experimental and control groups. Those scoring above the expected grade norms of 4.8 and 5.8 for next year's fifth and sixth grades were designated as fast achievers; those below, as slow achievers. Pupils in the fast-achieving group were matched on the two separate reading measures and then randomly assigned to either a control or experimental group. The same procedure was used at the slow levels. This procedure provided matched experimental and control groups of two levels at each separate grade.

The research plan used called for teachers of the control groups to teach reading as they always had in the traditional classrooms. The experimental groups separated at a designated hour and each pupil went to a reading class of his or her own level for a 50-minute period of reading instruction. The length of the period for the control group was also 50 minutes.

A brief review of the situation relative to the use of and availability of materials follows:[12]

> During the summer of 1958, book carts and supplementary reading materials were purchased for all eight classes. A new and unfamiliar basal reader series was purchased for the experimental classes. All participating teachers had equal access to a well-stocked

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[9] Adapted from Cecil Floyd. "Meeting Children's Reading Needs in the Middle Grades: A Preliminary Report," *The Elementary School Journal*, Vol. 55, October 1954, p. 100–103. Copyright 1954 by the University of Chicago.

[10] Quoted and adapted from Elmer F. Morgan and Gerold R. Stucker. "The Joplin Plan of Reading vs. Traditional Method," *Journal of Educational Psychology*, Vol. 51, 1960. p. 69–73.

[11] Adaptation of Morgan and Stucker's report. *Ibid.*, p. 69.

[12] *Ibid.*, p. 70.

> storeroom of supplementary readers, reading materials, and hundreds of library books from the county library. The participating teachers asked that no one teacher be given any supervision as they felt that teaching conditions should remain the same for all. . . .

As the investigators report, several limitations inherent in the nature of the design could not be avoided. The number of experimental groups of different levels was limited. However, the evidence indicated significant gains in favor of the experimental group at all levels. Relative to the results, Morgan and Stucker[13] say:

> It was concluded that for the single school where the experiment was run, the Joplin Plan was more effective. It was suggested that the obtained superiority might be due to the lowered variances of the experimental groups, which allowed the teacher to offer more effective verbal and emotional rewards, but more particularly allowed the slow student to function in a non-threatening atmosphere which maximized positive feedback from readable materials.

Approximately 600 children and 17 teachers in 2 schools were involved in a pilot program in Palmdale School District in Los Angeles County, Calif. The focus of the program was the reorganization of groups around actual reading ability. As reported by Ervin Nephew,[14] the curriculum coordinator, each child was given an individual reading test to determine the level at which he could pronounce words accurately, comprehend in light of thought and fact questions, read in a conversational manner, and read without indication of tension.

To the extent possible, each teacher was assigned to work with the instructional level group of her choice. A completely new series of readers was used since many children were familiar with the books available to them.

A working platform evolved which included more than 30 items, a few of which were: groups set up are to remain flexible; groups will not be designated by grade levels; children are to move from one group to another at any time as they indicate ability to do so; teachers must exert every effort to help each child establish and maintain his self-respect, his self-confidence, and the respect of other children; the teacher must demonstrate this respect for the child; teachers must help each child determine and evaluate his own progress and his own areas of difficulty.

About the pilot program Nephew[15] says:

> . . . It was apparent that no organization pattern will in itself produce an improved program. What is really important is the teacher's growth in understanding of the reading process and the relationship of the child to the process. Even more important is the extent to which the teacher is inspired to change her methods of teaching, her use of materials, and her attitudes toward reading to conform to her growth in understanding.

An experimental program in the Highland Park Elementary School, reported by Barbe and Waterhouse,[16] was designed to improve the teaching of reading by grouping children in the upper grades by reading levels one period each day and to provide the reading instruction in accord with these levels.

Participating in this program were 6 teachers and approximately 180 children in grades 4, 5, and 6. Among the first steps in the program were determination of the grade level of each child in order to decide on his group placement, and ascertainment of his starting point in the experiment. To accomplish this purpose, several sources of information were used: (1) results of a standarized group reading test, (2) an individual informal reading test developed by the staff of the local reading center, and (3) the teacher's rating. Groups were established on the basis of the number of children in each level and the number of teachers available. The reading levels ranged from grade 1 to grade 6 and above. The teachers were assigned to teach the groups at the reading levels for which they felt themselves best prepared.

The program was based on a commonly used series of basic readers. Teaching procedures were those outlined in the manuals.

The instruments to help determine the effectiveness of this program included the Gates Reading Survey Form I, administered in November, and Form II in May. The results showed a mean increase of 0.9 of one year in grades 4 and 6, and 1.2 years in grade 5.

The investigators, Barbe and Waterhouse,[17] report on the results as follows:

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[13] *Ibid.*, p. 73.

[14] Ervin Nephew. "We Reorganized the Reading Program Around Actual Reading Ability," *The Instructor*, Vol. 49, March 1960. p. 75–87.

[15] *Ibid.*, p. 87.

[16] Adapted from Walter D. Barbe and Tina S. Waterhouse. "An Experimental Program in Reading." *Elementary English*, Vol. 33, February 1956. p. 102–104.

[17] *Ibid.*, p. 103.

> ... Even though the period between testing was only 6 months, there was a mean increase of 0.9 of one year in grades 4 and 6 and 1.2 years in grade 5. Actually, these data reveal only part of the program, for no effort was made to see how much progress could be made. Instead, each child was taught at his level, and was allowed to progress at his own rate. The greatest amount of individual improvement was noticeable in those children in the groups working at the lower levels.

"In an effort to improve the general reading ability of Nelsonville's schoolchildren," says Lowell Cole,[18] "we attempted to place them in classroom-sized groups on levels of their approximate reading ability."

The factors considered in establishing the groups were the pupils' mental ability, present achievement level, and the teachers' judgments of pupil ability. Involved in this program were 371 children, grades 3 to 6, and 11 teachers. An hour-long period each morning was set up for basic reading instruction. Each teacher was assigned to one of the achievement level groups to provide reading instruction in terms of the level of reading ability in his group.

In his report on the results of this program, Cole[19] explains that it is too soon to make generalizations, since the program has been in effect for only 1 year. However, according to Cole, the results of standardized achievement tests, show—

> Average reading placement growth for the entire school is 1.08 years for the year 1958–59 over 1957–58.

Esther Carlson and Joyce Northrup[20] report an experiment in grouping 127 pupils in the fourth grade assigned to reading rooms for an hour each day according to ability—superior, average, low-average, and retarded. Assignments of pupils to groups were based on the findings of the Gates Reading Survey, Grades 3 to 10, Form I. Consideration was also given to factors of emotional stability, maturity, motor coordination, oral reading ability, and IQ.

The reading program includes concentrated reading study. As Carlson and Northrup[21] report, attempts are made to incorporate vocabulary, enrichment, comprehension, increase of speed, phonetics study, creative dramatics, library reading, current events, and study skills. After 2 years the results of the experiment as determined by the Gates Reading Survey for grades 3 to 10, showed an average gain per pupil of 13 months for the 2-year period.

Davis and Tracy[22] report a study of two groups of fourth, fifth, and sixth grades on the effectiveness of two grouping plans (a Joplin-type plan and a random grouping arrangement) for arithmetic instruction. The study considered the possible effects of verbal and quantitative intellectual abilities, self-concepts, general and test anxiety, and attitudes toward arithmetic.

Pupils in the Joplin-type plan were grouped according to past achievement and ability and without regard to homeroom assignment. No grouping across grade levels was employed. In the random-type grouping pupils received their arithmetic instruction from the teacher of the self-contained class. In both grouping patterns, pupils at the same grade level used the same State-adopted textbook.

Results and conclusions as reported by the investigators follow:

- A significant difference between schools did not appear at the end of the school year.
- The randomly grouped pupils gained significantly more than did the Joplin-grouped pupils in comprehension except for boys at the fifth-grade level.
- Essentially the findings of this study do not lend research support to an ability grouping (Joplin type) plan in arithmetic instruction. To facilitate achievement in arithmetic, factors more relevant to the teaching act than the process of constituting class groups probably should be considered. Future research should also be designed to take into effect teacher knowledge of, and attitude toward arithmetic and teacher variability in the process of teaching arithmetic.

C. *Ability Grouping and Achievement Motivation*[23]

This research consists of two field studies undertaken to explore some of the motivational implications of ability grouping as manifested in scholastic achievement, reported interest in schoolwork, and the development of realistic vocational aspirations among students who differ substantially in the nature of their motivation to achieve.

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[18] Adapted from Lowell Cole. "Nelsonville's New Reading Program Improves Pupil Progress," *Ohio Schools*, Vol. 38, January 1960. p. 34.

[19] *Ibid.*, p. 34.

[20] Adapted from Esther S. Carlson and Joyce Northrup. "An Experiment in Grouping Pupils for Instruction in Reading," *The National Elementary Principal*, Vol. 35, 34th Yearbook, September 1955. p. 53–58.

[21] *Ibid.*, p. 54.

[22] O. L. Davis, Jr., and Neal H. Tracy. "Arithmetic Achievement and Instructional Grouping," *The Arithmetic Teacher*, January 1963. p. 12–17.

[23] Adapted from John W. Atkinson and Patricia O'Connor. *Effects of Ability Grouping in Schools Related to Individual Differences in Achievement-Related Motivation.* Cooperative Research Project No. 1283. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, March 1963. 164 p.

As a result of an anlysis of motivational implications of ability grouping, guided by a conceptual scheme of achievement motivation, Atkinson and O'Connor made two assumptions: (1) That feelings of success and failure in day-to-day school work are largely a consequence of evaluating one's own performance relative to the performance of others in the same class. This means, the investigators explain, that in a traditional class, which is heterogeneous in ability, the very intelligent child will almost always consider himself an outstanding performer and the least endowed child will seldom have this experience of success. (2) That individual differences in intelligence probably represent the best estimate of individual differences in expectancy of success which students bring to their schoolwork.

According to the theory of achievement motivation, neither positive motivation to achieve nor anxiety about failure should be very strongly aroused in a student when the probability of success relative to peers is either very high or very low. Achievement-related motivation is not likely to be strongly aroused for a considerable number of students in the class where all levels of ability are represented. This also implies that both positive interest in achievement and anxiety about failure should be more strongly aroused in a homogeneously, ability-grouped class. When the student of high intelligence is surrounded by classmates of equally high endowment, his own expectancy of success must be lower than when he is substantially higher in ability than most of his peers. Similarly, the less-endowed student surrounded by peers of comparable ability should find himself with an increased expectancy of success relative to his peers. For many students, then, according to Atkinson and O'Connor:[24]

> Homogeneous grouping should provide a competitive achievement situation approximating one of intermediate probability of success, or intermediate difficulty, than the traditional heterogeneous class.
>
> According to the theory of achievement motivation both effort and anxiety should be more apparent when ability grouping is employed and both should be generally weaker when students of diverse abilities are members of the same class. Whether or not ability grouping will enhance school performance or produce a decrement in performance should depend, then, upon the relative strengths of the motive to achieve success (n Achievement) and motive to avoid failure (Test Anxiety) within the individual students. According to theory, an increase in positive interest leading to enhancement of performance should occur for students who are highly motivated to achieve but weak in the disposition to be anxious when they are subjected to ability grouping. However, students who are more strongly disposed to be anxious about failure than motivated to achieve success, *may* be less adequately motivated under a program of ability grouping than in the heterogeneous class. For in them, the arousal of anxiety may be substantially stronger than the arousal of positive motivation to achieve.

Two studies were initiated by Atkinson and O'Connor to explore some of the potential effects of ability grouping on motivation. The purpose of Study A was to explore some of the possible consequences of participation of well-qualified junior high school students in special sections of mathematics beginning in the seventh grade, followed by a systematic program of acceleration for qualified students in high school.

Study B was concerned with effects of homogeneous ability grouping in the sixth grade—a first experience with ability grouping for students in experimental classes. Scholastic achievement during the sixth grade and reported interest in schoolwork during the year were matters of central interest.

For both studies, hypotheses derived from the theory of achievement motivation concerning effects of ability grouping on the motivation of students who differ in personality provide the guiding ideas of this research. The investigators[25] said:

> We expected to find that ability grouping might produce an enhancement of achievement-related motivation, as manifested in scholastic performance, development of realistic vocational plans, and reported interest in schoolwork in some but not necessarily all students. We supposed that students who were more strongly disposed to be motivated to achieve (n Achievement) than to avoid failure (Test Anxiety) would generally profit most by systematic ability grouping and that those in whom the motive to avoid failure (Test Anxiety) was relatively stronger would profit least and perhaps even suffer some decrement when compared to a control group not subjected to ability grouping.

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[24] *Ibid.*, p. 7–8.

[25] *Ibid.*, p. 10.

Since the focus of this publication is on grouping in the elementary school, the details of Study A which deals mostly with junior and senior high school will not be reported here. However, a statement about results of both studies follows: Study A produced very little evidence to support the hypotheses though it did raise some important questions concerning the development of vocational aspiration, which deserve attention in subsequent research. However, Study B, which deals with ability grouping in the elementary school, provides support for the hypotheses stated above. A review of Study B follows:

We shall now examine some of the motivational implications of ability grouping in the sixth grade on achievement and reported interest in schoolwork.[26] The general hypothesis was that the greater challenge produced by homogeneous grouping should produce enhancement of interest and learning among students who are more strongly motivated to achieve than to avoid failure. But if the tendency to become anxious about failure is relatively strong in relation to the strength of motive to achieve, the more competitive situation in homogeneous ability-grouped classes should provide a greater threat than the traditional class which is heterogeneous in ability. As a consequence, the investigators report, the relatively more anxious students should find the homogeneous class less attractive and show some evidence of a decrement in their schoolwork. The specific hypotheses tested in this study are:

> 1. Students in whom the motive to achieve success is relatively strong in relation to the motive to avoid failure (Test Anxiety) (a) will show more growth on measures of scholastic achievement when they are placed in a homogeneous ability group than when they are placed in a group in which the range of ability is more heterogeneous, and (b) when placed in a homogeneous group they will show more growth measures of scholastic achievement than will students in whom the motive to avoid failure is strong in relation to motive to achieve success.
>
> 2. Students in whom the motive to avoid failure is relatively strong in relation to the motive to achieve success will show *less* growth on measures of scholastic achievement when they are placed in a homogeneous ability group than when they are placed in a group in which the range of ability is more heterogeneous.
>
> 3. Students in whom motive to achieve success is relatively strong in relation to the motive to avoid failure will report greater interest in class activities and a greater increase in interest compared with the previous year when they are placed in a homogeneous ability group than when they are placed in a group in which ability is more heterogeneous; and these students, when placed in a homogeneous group, will show greater interest and greater increase in interest than students in whom the motive to avoid failure is strong in relation to the motive to achieve success.
>
> 4. Students in whom the motive to avoid failure is relatively strong in relation to the motive to achieve success will report less interest and less increase in interest relative to the previous year when they are placed in a homogeneous ability group than when they are placed in a group more varied in ability.

The basic plan of this study was to compare measures of achievement and interest in sixth-grade students experiencing homogeneous ability grouping for the first time with comparable measures obtained from students in control classes who continued (as in fifth grade) in classes that were heterogeneous in ability. In each of the schools in which homogeneous ability grouping was employed, one of the three sixth-grade classes was composed of "selected" students; the other two classes were considered "regular" sections. In school A, intelligence test scores were the primary criterion for placement in the advanced section. In school B, performance on achievement tests was given top priority. But judgment of teachers concerning individual students was an important factor in deciding who should be in "selected" and "regular" sections in both schools. The control group was composed of four heterogeneous classes in school A and three classes in school C. (School B instituted a team-teaching method in 1960 and in 1961, which made the classrooms unsuitable for this research. School C was chosen to enlarge the size of the control group.)

All students in each of the sixth-grade classes were tested. Students for whom an intelligence test score (California Mental Test) and scores on both Achievement and Anxiety were obtained numbered 206 in the homogeneous classes and 233 in the heterogeneous classes.

In the first test period[27] an apperceptive test of n Achievement was administered in each classroom. The form of the test consisted of four verbal leads,[28] each of which was placed at the top of the page in the test booklet, and provided suggestions for the writing of stories. For example: "This story is about a brother and sister playing a game. One of them is a little ahead of the other." The child is asked to make up the rest of the story. Suggestions follow: "Tell what is happening." "Tell what happened before..."

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[26] *Ibid.,* Chap. 3.

[27] *Ibid.,* p. 90–91 and p. 145.

Then, a preliminary form of the Test Anxiety Scale for children developed by Sarason[29] was read aloud. This inventory requires a self-report of symptoms of anxiety experienced in test situations in the classroom.

The imaginative stories elicited by the verbal leads were scored for Achievement. A total Achievement score was obtained by summary scores obtained in four stories by each pupil.

The Test Anxiety score consists of the number of items out of the 40 presented on which pupils endorsed as self-descriptive some statement reflecting the experience of anxiety in the classroom.

To provide a single index of the strength of motive to achieve (Achievement) relative to strength of the motive to avoid failure (Test Anxiety), raw scores on both measures were converted to standard scores, based on the distribution of scores obtained from sixth-graders in a given school in a given year. The standard score on Test Anxiety was substracted from the standard score on Achievement to give the index of *resultant motivation to achieve.*

Several months later in the 1959 classes and a few weeks later in the other years, additional tests were administered. An achievement Risk Preference Scale,[30] consisting of 21 paired comparisons, was given. In each item, one alternative describes a choice or attitude which, according to the theory of achievement motivation, is characteristic of persons for whom motive to achieve is the stronger motive.

The other alternative describes a choice or feeling which should be more descriptive of persons in whom motive to avoid failure is the stronger motive. The score obtained represents the number of items in which the achievement-oriented alternative is selected as self-descriptive.

Also administered was a questionnaire designed for the present study concerning interest in school. It consisted of two parts: The first part is comprised of 20 specific activities which are undertaken in the sixth grade—writing stories, studying the universe and the solar system, etc. Students were asked to place an X on a line scale at any point on a line for each item. Phrases such as "like very much," "neither like nor dislike," and "dislike very much" were introduced as reference points. A similar format was employed for 11 other items included to elicit evidence of a change in interest in school work between the fifth and sixth grades. Descriptive phrases were "much more interesting this year," "about the same in interest as last year." Scores were summed over items yielding two final scores. One is an index of reported interest in schoolwork at the time of testing. The other represents an index of interest in some activity in sixth grade compared to interest in it in fifth grade.

The grade level scores attained on the total reading and total arithmetic tests of the California Achievement Test given in January of the fifth and sixth grades constitute measures of scholastic achievement.

Results of Study B[31].—The outcomes of this study of sixth-grade pupils indicate that placement in homogeneous groups does not lead to a general enhancement or decline in interest of learning. A discussion of results of the investigation follows:

> Motivational dispositions interact with treatment so that the effect for some students is advantageous and for others disadvantageous. Students high in resultant achievement motivation show higher growth in achievement and greater interest in schoolwork when in homogeneous groups than when in heterogeneous groups. Students, low in resultant achievement motivation (the more anxious students), show a decline interest when placed in homogeneous ability groups but no marked difference in achievement. Within homogeneous classes, achievement motivation is positively related to better growth and higher interest. Within heterogeneous classes there is no relationship between motivation and interest or *growth* in performance between fifth and sixth grades. Differences associated with motivation are obtained both for students of high ability placed in special advanced sections and for students of lower levels of ability placed in regular sections. If these results are confirmed in subsequent investigations, achievement motivation should become a pertinent factor in determining which children should be assigned to homogeneous ability groups if maximization of interest in schoolwork and learning is desired.

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[28] See D. C. McClelland and others, *The Achievement Motive.* N.Y.: Appleton-Century-Crofts, 1953. 384 p.

[29] See S. B. Sarason and others, *Anxiety in the Elementary School Children.* New York: Wiley and Sons, 1960. p. 306.

[30] Atkinson and O'Connor, op. cit. p. 91.

[31] *Ibid.*, p. 107.

Chapter IV

Normal Range Versus Increased Range of Individual Differences

In the preceding section we compared achievement gains of pupils grouped according to ability with their counterparts in heterogeneously grouped classrooms. The focus in the following studies is a comparison of achievement gains of pupils in classes in which the range of differences has been widened (or increased) to include several grades, for example, with pupil gains in normal or typical heterogeneously grouped one-grade classrooms. Reports of a few such studies follow.

Rehwoldt and Hamilton[1] report a study and an analysis of some of the effects of interage and intergrade grouping in an elementary school in Torrance Unified School District in California.

The problem for the study was to determine whether greater learning and growth of pupils would take place in classes that contained three grades and a wider age range of 3 years or more than in typical classes in which there was only one grade and the normal range in age and ability. The purpose of the study was to evaluate the effectiveness of such grouping as compared with a multigrade grouping pattern in which differences among pupils was considered a primary factor. Among the questions constituting the basis for the investigation were: Do the pupils in the multigrade classes make greater gains in subject matter achievement? Do the pupils in the multigrade classes make greater gains in certain aspects of maturity—in personal and social adjustment? Do they make greater progress in certain behavior characteristics? Are the attitudes toward school favorably affected by membership in a multigrade class? Is the pattern favorably accepted by parents, teachers, and administrators?

The procedure used in the study included: Selection of seven multigrade classes constituting the experimental groups and eight regular classes containing one grade each which were used as the control groups. There were nine primary classes, grades 1 through 3, of which four were multigrade classes, each containing an approximately equal number of pupils from each of the three grades. Parental approval was secured before a child was placed in a multigrade class.

The teachers for the multigrade groups were selected by lot (drawing of numbers). Neither the teachers nor the administrator received any specific direction or help that might be used in working with multigrade classes.

A few of the comparisons were between scores of pupils in the multigrade classes and the single-grade classes in the areas of subject matter, personal and social adjustment, and certain aspects of maturity and characteristics of behavior. The comparisons were based upon the gains made as determined by the differences in test scores made on an October and May test. All of the multigrade pupils in each grade level were compared with the regular grade pupils of the same grade level. A comparison was made between 97 multigrade pupils and their matched partners from the regular-grade classes.

Among the instruments used were: California Achievement Test Battery, California Test of Personality, Vineland Social Maturity Scales, University of Chicago Behavior Description Chart, Pupil Attitude Questionnaire, Parental Attitude Questionnaire, Teacher-Administrator Opinionnaire, Social Acceptance Scale, and Friendship Test.

The evidence seems to support the generalization that children learn more from those who are different than from those who are similar.

Among the findings were:

- The academic achievement of pupils in most grade levels was favorably influenced by the fact that they were members of a multigrade class (three grades).
- Membership in a multigrade class con-

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[1] Adapted from Walter Rehwoldt and Warren W. Hamilton. "An Analysis of Some of the Effects of Interage and Intergrade Grouping in an Elementary School." Final chapter of dissertation, University of Southern California. January 1957.

tributed favorably to the personal adjustment of pupils.

- The social adjustment of pupils in a multigrade class was improved.
- Pupil attitudes toward school were better in the multigrade group.
- Parents of pupils in multigrade classes expressed strong support in favor of such grouping and evidenced better attitudes toward school than did the parents of regular-grade pupils.
- Multigrade pupils made greater improvement in certain characteristics of behavior. Evident at every grade level, this finding supported the hypothesis that certain patterns of behavior would show more improvement in classes in which there was a wider range of ages than in regular classes where there was a limited range of ages. Where evidence of leadership was indicated, there were less aggressive or withdrawn tendencies.
- Pupil-pupil relationships in multigrade and regular-grade classes were similar.

Knight[2] studied pupil achievement in double grades in the New Haven schools. He found that differences in results of standardized tests showed little difference in direction between the fourth grade taught separately or combined with the grade above or below. In fact, double grades seemed to foster acceleration in grade location and also to reduce retardation. However, principals did not like this plan. Teachers preferred single grades.

A study was made in Hamilton, Ohio, of 16 class groups of fifth and sixth grades on the relationship between group achievement and range of abilities within the group. In each grade in each school two groups were established with variations in the range of IQ's. These groups were designated as the wide- and narrow-range groups. The average range of IQ points was 30. Edmiston and Benfer,[3] the investigators, found better reading achievement in the wide-range groups (40 IQ points) than in the narrow-range groups (30 IQ points). Although parents and teachers generally have expressed concern if children in two or more grades are put together under one teacher, studies made have not, on the average, shown unfavorable differences in achievement when compared with the single teacher per grade plan of organization.

Miller, McDonald, and Knight[4] report a program of interage grouping in the upper elementary school. Fifth- and sixth-grade children are deliberately mixed for instruction. Pupils usually remain with the same teacher for 2 years. Broad curricular areas are planned in 2-year blocks. Learning experiences are planned by teachers and children in relation to pupil needs, interests, and purposes as well as to the needs of society and content. Evaluation of pupil growth makes use of standardized assessment devices and informal appraisals. The pupil's own potential is the standard against which he is evaluated. The typical "grade standard" is not used. The investigators found that teachers, parents, and pupils are enthusiastic about the program. Achievement as determined by standardized tests continues to be high.

In a study reported earlier by Miriam Goldberg[5] in which achievement of pupils in broad-, medium-, and narrow-range groups were compared, pupils scored highest on the average in the broad-range group.

The evidence appears to support the conclusion that children may learn more from those who are different than from those who are similar.

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[2] See E. E. Knight, "A Study of Double Grades in New Haven City Schools," *Journal of Experimental Education*, Vol. 7, 1948. p. 11–18.

[3] Adapted from R. W. Edmiston and J. G. Benfer. "The Relationship Between Group Achievement and Range of Abilities Within the Group." *Journal of Educational Research*, Vol. 42, 1949. p. 547–548.

[4] Adapted from George L. Miller, Jack A. McDonald and Don A. Knight. "Inter-Age Grouping in the Upper Elementary School." *Toward Effective Grouping.* Washington: Association for Childhood Education International, 1962. p. 50.

[5] Adapted from Miriam Goldberg, *The Effects of Ability Grouping: A Comparative Study of Broad, Medium and Narrow Range Classes in the Elementary School.* New York, N.Y. Horace Mann-Lincoln Institute of Experimentation, Teachers College, Columbia University (Interim Report). Chapter VIII, 1965.

Chapter V

Examining Assumptions That Underlie Acceptance of Ability Grouping

Research findings seem to indicate that children grouped according to ability seem no more likely to make greater achievement gains than their counterparts in heterogeneously grouped classrooms. Despite the evidence, however, some maintain that grouping children according to ability (maturity, mental, or achievement levels) is a logical approach to meeting individual differences. It ought to work, they say. If not, what are the reasons? Finley Carpenter[1] reports as follows:

> Those who favor homogeneous grouping say that the teacher cannot handle a class efficiently when he must deal with abilities varying from "retarded" to "genius." . . . homogeneous groups should be formed and taught separately . . . The case for heterogeneous grouping is based, in the main, on the claim that pupils with large differences in ability undergo valuable interactions that supply learning experiences not possible under homogeneous grouping . . . Learning and personal adjustment are best nurtured in a rich and flexible environment, not in one that is artificially restricted beyond limits of the usual sample of pupils and things . . .

These and other reasons may be offered in support of a particular position. Opposing positions, however, are usually based on different assumptions. In response to his own question, "Can the arguments about pupil grouping be resolved?", Carpenter advises that assumptions underlying each of the positions need further testing before the arguments about homogeneous and heterogeneous grouping can be resolved.

As a way of seeking further knowledge and understanding of the problems involved, an examination of some generally accepted assumptions follows:[2]

1. That grouping children according to ability can actually be accomplished is an assumption increasingly difficult to accept as true.

The inconclusive nature of research findings about relative merits of ability and other ways of grouping may stem from difficulties involved in actually dividing children according to ability. Grouping children according to ability (maturity, mental or achievement) may, to a limited extent, be possible for certain purposes and for short periods of time. But the number of different and constantly changing interrelated factors involved in pupil learning make ability grouping difficult, if not impossible, to achieve especially in the early grades.

2. That testing or measuring instruments can adequately measure a child's ability and/or his learning potential is an assumption in need of continuous reexamination.

Acceptance of ability grouping is based partly on the assumption that a child's ability to learn can be adequately measured so that he can be placed with those whose learning ability (maturity, mental or achievement) levels are approximately the same as his.

But new knowledge about the nature of intelligence and ability to learn is continually coming to light. Many dimensions of intelligence recently identified are not included in commonly used intelligence tests. Calvin Taylor,[3] for example, points out that other dimensions of the mind were considered by a group of scientists to be more important in their work than those regularly measured by traditional tests. Important dimensions of intelligence not included in the commonly used IQ tests are cited by Taylor as, "ability to sense problem areas, fluency of ideas or ability to revise one's own ideas to produce more perfect products of one's own."

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[1] Finley Carpenter. "Can the Argument About Pupil Groupings be Resolved?" *School of Education Bulletin,* The University of Michigan, Vol. 30, April 1959. p. 106–109.

[2] Adapted from Association for Childhood Education International, *Toward Effective Grouping,* Washington: ACEI, 1962. p. 25.

[3] Adapted from Calvin Taylor, "A Tentative Description of the Creative Individual," *Human Variability and Learning,* Papers and Reports from the Fifth Curriculum Research Institute. Washington: Association for Supervision and Curriculum Development, 1961. p. 62–69.

"Some people think of intelligence," says Thelma Thurston, as "something that some lucky souls have a lot of while others have only a little." She goes on to explain that "intelligence is not one thing, but a combination of several different abilities tied up in a package that is labeled intelligence."

As a result of much testing and research, a number of primary mental abilities have been identified. Mrs. Thurston names some of these as follows: The space factor—the ability to visualize objects in space; the number factor; word fluency; ability to memorize; induction—the ability to discover the underlying rule or principle in the material one is working with.

Alexander Frazier[4] calls attention to increased knowledge and understanding about learning, making a special point of a faulty assumption that speed in learning is necessarily the most distinguishing characteristic of learning ability. Frazier says:

> Learning is multidimensional. How fast or how slow a learner performs is no more indicative to us of his power than many other qualities—his capacity for insight, his ability to relate what he learns to what he already knows, his skill in bringing new knowledge to bear on new problems, his willingness to confront the unfamiliar and stay with it long enough to make sense out of it.

These and many other dimensions—space relationship, creative ability, word fluency—now recognized as part of intelligence help us to realize the serious limitations of traditional approaches to testing intelligence as a way to identify ability to learn, and to rely on the outcomes of tests as a basis for classifying children according to ability.

> 3. Evidence does not support the assumption that if a child's abilities and attributes have been accurately assessed and if he has been placed in the ability group appropriate for him, he will probably retain the attribute that governed his placement in the group.

Harold Shane[5] reports:

> The uneven growth patterns of individual children make grouping hazardous. One is never completely certain that a given child will long retain the personal and academic attributes governing his placement in a group.

Much has been said about the wide range of individual differences in a typical class. However, variability during the day or days within the individual is also significant in providing adequate learning opportunities for each individual and in recognizing factors that make ability grouping impossible—except on a short-term and limited basis. Uneven growth patterns of children are important to consider in any program which involves grouping. Again quoting Shane:[6]

> The uneven social and academic profiles of most individual children complicate grouping—at least insofar as any type of ability grouping is concerned. Many children vary in achievement by as much as a year from one subject area to another (e.g., a child's arithmetic computation score at the time he is in grade 4, seventh month, may be 3.9 while his reading comprehension may be 5.8).

Some believe that the education age forms a sound basis for classifying individuals. It now seems clear, however, that education includes more than enumerated components to education age. As Alice Keliher[7] says:

> It is simply a statement of fact that the combined measures of verbal intelligence and the academic skills, plus a vague factor of teacher's judgment, which may or not concern itself with other than academic skills, do not represent more than a small portion of the traits and characteristics of an individual. For this reason, the use of those bases for any action which concerns the whole individual, when traits other than those measured are to be affected, is without justification.

In view of the many and varying elements that make a difference in each individual's ability to learn, it seems unlikely that homogeneous grouping according to any form of generalized learning ability can actually be accomplished except in a very limited sense.

> 4. Available evidence seems not to support the assumption that through ability grouping procedures the range of individual differences in a class is materially reduced and thereby increases the possibility for effective learning.

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[4] Alexander Frazier. *Needed: A New Vocabulary for Individual Differences.* Prepared for August 1960 Workshop for Principals and Consultants, Minneapolis, Minnesota. p. 4.

[5] Harold Shane. "Grouping in the Elementary School," *Phi Delta Kappan* Vol. 12, April 1960. p. 313.

[6] *Ibid.*, p. 313.

[7] Alice Keliher. *A Critical Study of Homogeneous Grouping.* Contributions to Education No. 452. New York: Teachers College, Columbia University, 1931. p. 76, 108.

It is often assumed that in a school organized according to ability, the range of ability in any one class is considerably reduced so that the same or similar learning activities suitable for the whole group may be selected. Research evidence indicates, however, that this is a faulty assumption. Burr[8] found, for example, that after grouping had been carried out, four-fifths of the total range of ability in the original individual group remained in each of the so-called homogeneous groups. In separate cities the overlapping ranged from 68 to 85 percent of the total grade range.

Individual differences among children in a group will continue to exist regardless of the grouping pattern used. Although the range of mental age scores, let us say, may be somewhat less than the average range at the time when children are assigned to a group in accord with homogeneity of mental ability, the relative rates of growth are not likely to be the same. Unless the children are seriously deprived in the same way, the most likely result is movement toward increased heterogeneity. However, differences in such groups may not become as obvious as they would normally be in class heterogeneously grouped from the beginning. And so the device itself, homogeneous grouping according to ability, in some situations seems to lower recognition of the need to provide for individual differences. On this point, Alberty and Brim[9] report as follows:

> Fundamental to any program based upon ability grouping is the assumption that learning takes place more effectively if the range of differences in pupil ability is materially reduced, so that learning activities that will be appropriate for the group as a whole may be selected . . . Yet the fact remains that the device lends itself to the facility of uniformity of assignment and instruction. The aspects of such mass instruction will be less obvious when pupils are grouped more homogeneously. Consequently, the teacher will be less likely to recognize and provide for indivdual differences.

The number of studies available is too limited for more than a tentative conclusion, but it is interesting to note that the most consistent finding in the research examined is that on the average, pupil progress in academic achievement is highest in the classes in which the range of individual differences among pupils has been broadened.

5. The assumption is questionable that grouping children according to ability fosters the development of desirable attitudes and healthy self-concepts.

This belief is based on several assumptions, some of which stem from the judgment that grouping children according to ability provides opportunity for meeting learning needs in accord with individual differences in ability. It is assumed that ability grouping helps to facilitate pupil learning and that as a result higher achievement gains can be obtained. It is also assumed that the development of desirable attitudes in pupils will result. There are those who say that homogeneous grouping offers more chance for success and happiness and eliminates snobbishness and conceit of bright pupils, as well as the discouragement of daily failures[10] for slow learners.

A study by Alice Keliher[11] reports responses of children in one sixth grade and two eighth grades, grouped heterogeneously.

> The results showed the tendency for the brighter children to remain in the upper 75 percent of responses. The important point in relation to suppression of children of low intelligence, however, is that for two eighth grades the children of the lowest 30 percent in intelligence are as likely to be in the upper 30 percent in responses as they are to fall in the lower one-half. In the three classrooms observed in which progressive practices were followed, discouragment and suppression do not necessarily occur in mixed groups in any fixed relation to intelligence.

A study was made of the self-concepts of 102 fifth-graders who had been grouped according to ability and taught separately beginning with the first grade. Among the findings reported by Maxine Mann[12] are:

> In the top section, 25 children gave positive responses in terms of ability or achievement—21 in positive "I" terms. No negative responses were made. In the next lower section,

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[8] Marvin Y. Burr. *A Study of Homogeneous Grouping.* Contributions to Education No. 457. New York: Teachers College, Columbia University, 1931. p. 41.

[9] H. B. Alberty and O. G. Brim. "The Relations of the Newer Educational Practices to Grouping." *The Grouping of Pupils,* Part I, Thirty-fifth Yearbook of the National Society for the Study of Education, 1936. p. 129.

[10] Sara Lou Hammond. *Homogeneous Grouping and Educational Results.* Curriculum Letter No. 40. Columbus, Ohio: Curriculum Letter Department, Education Center, 1959. p. 3.

[11] Alice Keliher. *A Critical Study of Homogeneous Grouping.* Contributions to Education No. 452. New York: Teachers College, Columbia University, 1931. p. 108.

[12] Maxine Mann. "What Does Ability Grouping do to the Self-Concept?" *Childhood Education,* Vol. 36, April 1960. p. 357–361.

Section Two, there were only seven responses in terms of ability or achievement and in Section Three, only five. In Section Four, the lowest, the 14 responding in terms of ability or achievement gave negative responses—6 in "I" terms, 7 in "we" terms. It is interesting to note that there are no negative responses in Section One and Two, few in Section Three, and only negative responses in Section Four.

Relative to the results of her study, questions asked by Maxine Mann[13] are:

> What are the experiences which have contributed to the way children in the "top" and "bottom" groups see themselves? Could teacher rejection of the low groups and acceptance of the high group help to account for it?

On the basis of studies in underachievement of the academically talented Miriam Goldberg[14] says:

> . . . the underachiever perceives himself as less able to fulfill the tasks required of him, less eager to learn, less confident in himself, and less ambitious. But his level of aspiration in these areas is as high as that of the high achievers. Thus, the gap is great, perhaps too great, for him to believe that any amount of effort will close it.

Studies examining attitudes and self-concepts in relation to ways of organizing children for instruction are too limited to make final conclusions. Evidence, however, seems not to support the generalization that grouping children according to ability contributes to the development of desirable attitudes and healthy self-concepts. Some studies indicate that grouping underachievers together does not facilitate progress in academic achievement or the development of wholesome self-concepts.

Summary statements relative to assumptions about ability grouping

Examination of the assumptions underlying acceptance of ability grouping helps to point up some of the reasons why findings of research on relative merits of ability versus heterogeneous grouping on tested pupil achievement are inconclusive. Some of these reasons are:

> Except on a limited and short-time basis, it is unlikely that dividing children into ability groups can actually be accomplished with any assurance of accuracy especially in the early grades.
>
> The extent to which attempts to group children according to ability reduce the range of individual differences in a group is very limited.
>
> Uneven growth patterns of individual children make grouping hazardous. One can never be certain that a child will retain very long the attributes governing placement in a group.
>
> Attempts to group children according to ability may contribute to development of undesirable attitudes and self-concepts not in keeping with our educational purposes.

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[13] *Ibid.*, p. 361.

[14] Miriam L. Goldberg. "Studies in Underachievers Among Academically Talented." *Freeing Capacity to Learn.* Washington: Association for Supervision and Currculum Development, NEA, 1960. p. 60.

Chapter VI

Group Situations and the Individual Learner

Though learning of any kind is an individual matter whether the individual is alone or in a group situation, no learner is completely on his own to determine what he will or can learn. Among forces and factors that make a difference in what and how well he makes progress in his learning and achievement are: capacity for learning; physical and emotional health; energy output; level of biological maturity; accessibility of learning opportunities; and the influence on what he learns of peers, parents, and others. These and other things affect the way, amount, quality, and kind of success he demonstrates in the accomplishment of goals that make sense to him.

In the pages that follow, special attention will be paid to the effects of group situations in a classroom on individual learning, and to the teacher's function in these situations to help provide learning opportunities which assist learners to move ahead toward higher and more important learning tasks and goals.

Good group situations are necessary for effective and desirable individual learning. If membership in a group is a source of anxiety to a child, for example, and the group does not meet his emotional and social needs, the energy necessary for efficient academic learning (or other kinds) may be expended in self-protective or self-enhancement behavior. Some children attempt to withdraw or to escape from situations that they feel incapable of handling. The aggressive are likely to use methods such as fighting, talking back, bragging about their accomplishments, destroying property, and other retaliatory procedures in an effort to get the attention they seem unable to obtain in more normal ways. To have some status and influence in a group appears to be essential for successful achievement.

Without considerable depth of knowledge and understanding of human behavior and learning—as well as self-understanding—teachers frequently encounter difficulties in managing situations where children appear intent upon being disruptive or destructive. Some children demonstrate withdrawal tendencies which may indicate problems of a more serious nature than unruliness, but it is the unruly individual who can try the teacher's patience—sometimes beyond endurance. Often, not only the child struggles for the status he seems unable to get, but the teacher strives to retain her own status which in her opinion, at least, may be in jeopardy.

Enabling children to gain the peer status and influence they need is recognized by many teachers as one way of helping them make the best use of their potentials, and working with them to develop a classroom climate which fosters healthy self-concepts is characteristic of successful teaching. Research theory and evidence from the behavioral sciences give support to the importance of meeting psychological needs as an integral part of the educative process toward the accomplishment of academic as well as other purposes of the school.

Sociometric analysis attempts to find answers to questions such as these: To what extent are unhappy children withdrawn or fighting back because they are ignored or rejected by their classmates? To what extent does their behavior lead to neglect and rejection? What steps might be taken to develop desirable personal feelings?

Studies conducted by Lippitt and White[1] were designed to obtain understanding of social climate or group atmosphere and the effects on pupil behavior in three kinds of situations: authoritarian, democratic, and laissez-faire. In the authoritarian regime, the policies, assignments for work and companions were determined by the leader who remained aloof and tended to be personal in his criticism and praise of each group member. In the democratic group the leader assisted the group members in the development of policies. There was freedom for choices to be made of working companions. The leader tried to be objective in his praise and criticism and to identify himself with the group. Only a minimum of leader participation was the rule in the laissez-faire group. The leader supplied materials and information on request. He remained as an observer unless questioned.

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[1] See Ronald Lippitt and R. K. White. "Patterns of Aggressive Behavior in Experimentally Created 'Social Climates,' " *Journal of Social Psychology*, Vol. 10, 1939. p. 271–299.

The results of this experiment as well as others of this nature show that a group organized on a democratic basis is motivated to engage in self- and group-sustained activities toward individual and group goals. Children in the laissez-faire situation tend to become dissatisfied with their own inefficiency and limited accomplishment.

Chapter VII

Nongraded or Continuous Growth Concept

The studies reported here examine the effects of continuous progress or of nongraded plans on pupil learning.

"The nongraded school is designed to implement a theory of continuous pupil progress," say John Goodlad and Robert Anderson[1] who have recently completed a comprehensive report of their study on this subject. Quotes from a section of their publication dealing with nongrading in modern dress follow:

> . . . Since the differences among children are great and since these differences cannot be substantially modified, school structure must facilitate the continuous educational progress of each pupil. Some pupils, therefore, will require a longer period of time than others for achieving certain learnings and attaining certain developmental levels.

The authors make a special point of the difference between the theory of continuous progress and two other prevailing theories: the theory of grade standards and the theory of "social" promotion. The authors reject both of these theories. Pupil realities and grade standards are irreconcilable. "Having rejected the desirability of grades," these authors maintain, "we automatically reject the desirability of any kind of grade-to-grade promotion system."

"Social" promotion, they explain, implies a single criterion for pupil progress and denies the breadth of objectives with which elementary education is concerned.

Again quoting Goodlad and Anderson:[2]

> Continuous progress implies the advancement of pupils along a broken front in all significant areas of development. To remove grades without first understanding and accepting this theory of continuous pupil progress is to court local disaster and to discredit the nongraded school movement.

Some of the findings appraising the nongraded concepts of grouping children are reported:

> In Milwaukee,[3] children of the sixth or last semester of the primary unit in four nongraded schools were compared with children of the last semester of the third grade in four graded schools. Ninety-nine nongraded and 123 graded children comprised the samples. Test data in reading and personality adjustment, slightly favored the nongraded group, even though these children were a little younger and tested a little lower in mental maturity. Three of the nongraded classes were somewhat smaller than the graded classes. This may be the reason for the greatest gains in the nongraded classes. However, most studies of class size show no significant advantage of small classes over large classes in academic achievement.

In Appleton, Wis.,[4] 11 fifth-grade rooms were compared with 3 nongraded rooms in the Franklin School. The median chronological age and median mental age of all pupils tested were 10 years, 6 months, and 10 years, 11 months, respectively. Pupils were compared in reading and spelling. The results favored the nongraded rooms. Median grade placement scores for nongraded children in reading and spelling were 6.1 and 6.0, respectively, in contrast to 5.85 in both areas of the graded classes.

"These data," say Goodlad and Anderson, "are too limited to permit general conclusions, but it is gratifying to note that the nongraded school appears to hold its own firmly."

Another method of determining the relative merits of the graded and nongraded groups is done on the basis of "internal criteria."[5] Comparisons are made of the characteristics initially built into each and thus differentiating the graded structure from the ungraded. Examples follow.

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[1] John I. Goodlad and Robert H. Anderson. *The Nongraded Elementary School.* New York: Harcourt, Brace and Co., (Revised ed.) 1963. p. 52–53.

[2] *Ibid.*, p. 52–53.

[3] See John I. Goodlad and Robert H. Anderson. *The Nongraded Elementary School.* New York: Harcourt, Brace and Co., 1963. See also "A Study of Primary School Organization and Regular Class Organization at Primary 6 and 3A in Eight Schools." Milwaukee Public Schools, 1952. (Mimeo.)

[4] *Ibid.*, p. 57.

Graded structure	*Nongraded structure*
A year of progress in subject matter seen as roughly comparable with a child's year in school.	A year of school life may mean much more or less than a year of progress in subject matter.
Each successive year of progress seen as comparable to each past year or each year to come . . .	Progress seen as irregular; a child may progress much more rapidly in one year and quite slowly in another . . .
Inadequate progress made up by repeating the work of a given grade: grade failure is the ultimate penalty for slow progress . . .	Slow progress provided for by permitting longer time to do given blocks of work; no repetitions but recognition of basic differences in learning rates . . .

Kent C. Austin,[6] through his study of the ungraded primary unit in the United States, obtained information on the overall status of the ungraded unit and ascertained that developmental values were sought by the schools using this type of grouping plan. A brief report of Austin's study follows:

> The ungraded primary unit, which includes the school years commonly known as grades 1, 2, and 3, without regard for grade designations, had evolved as a method of gearing the early school program more nearly to the needs of each individual child. The purposes of the study were to obtain information concerning the development, objectives, operation, and professional staff of the ungraded primary unit. The questionnaire method was used to obtain data from schools or school systems known to be using the primary unit. Main objectives reported for the ungraded primary unit included providing for individual differences, providing for continuous, uninterrupted progress, releasing young children from strain and tension, and eliminating failure and needless repetitions.
>
> Social maturity, reading readiness, chronological age, physical maturity, mental age, emotional maturity, and IQ were all factors considered by responding schools when making original ungraded primary class assignments. The data showed that all schools allowed additional time for slower and less mature pupils, but majority did not provide for any acceleration for the more capable and mature pupils.
>
> The authors hold that the ungraded primary unit should be recognized as an organizational scheme, not an instructional device, and instructional methods previously assumed or demonstrated as sound should be continued. Both parents and teachers must continually be helped to undertake and lend support to the gradeless primary program.

Robert Carbone[7] reports a research study in which he compared the graded and nongraded elementary school and the effects of these schools on the achievement and mental health of children. In addition, he attempted to determine by use of a questionnaire whether the instructional practices of teachers in the nongraded schools differed from those used by teachers in the graded schools. The study included a total of 122 nongraded pupils and 122 graded pupils in grades 4, 5, and 6, selected from 2 graded and 2 nongraded school systems, matched for the purposes of this investigation.

Individual pupil's scores on the Iowa Tests of Basic Skills were obtained from permanent school records. The Mental Health Analysis of the California Test Bureau was administered to all pupils in the sample and five factors on this instrument were selected for analysis. Further information on pupil adjustment was obtained by using an experimental instrument, known as the Semantic Differential. In addition, the questionnaire designed to provide evidence on the instructional practices of teachers was developed and administered to all teachers of primary classes in graded and nongraded schools.

His main conclusions follow:

> (1) There was no evidence to indicate that pupils who had attended these nongraded primary schools achieved at a higher level during their fourth, fifth, or sixth years of school than pupils who had attended these graded schools. On the contrary, the differences were all in favor of the graded pupils; (2) in four out of five mental health factors there was no

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[5] *Ibid.*, p. 58–59.

[6] Adapted from Kent C. Austin, "The Ungraded Primary Unit in Public Elementary Schools of the U.S." Unpublished doctor's thesis, University of Colorado, Boulder, 1957. From *Dissertation Abstracts,* Vol. 19, 1958. p. 73–74.

[7] Robert F. Carbone. "A Comparison of Graded and Nongraded Elementary Schools," *Elementary School Journal,* November 1961. p. 82–88. See also, Stuart E. Dean, "Nongraded Schools," *Education Briefs,* No. 1, OE-20009, July 1964, p. 23.

> significant difference in the adjustment of these graded and nongraded pupils; and (3) teachers in the nongraded schools appeared to operate much the same as teachers in the graded schools. The implications of these findings are clear. First, it is not realistic to expect improved academic achievement and personal adjustment in pupils merely on the basis of a change in organizational structure. Second, the attainment of high pupil achievement and good mental health is not a unique result of nongrading. The evidence presented here indicates that these goals can also be attained in an elementary school organized under the conventional graded system.
>
> A third extremely important implication is suggested lest readers see this evidence as an indictment of the whole concept of nongrading. It seems clear that if any new form of school organization is to produce the benefits that its advocates envision, it must be accompanied by appropriate adaptations in the instructional practices of teachers. Changes in organizational structure alone are not enough.

An investigation was conducted by Maurie Hillson and others[8] on the effects of a nongraded organization on pupil achievement. The purpose of this investigation was to assess the effects of a nongraded program on the reading achievement of elementary school pupils.

All first-grade students entering the Washington School in Shamokin, Pa., for 1960–61, were randomly assigned to either experimental (N–26) or control groups (N–26). Subjects remained in their respective groups for the academic years 1960–61 and 1961–62 and continued into 1962–63. Reading readiness levels for all children in both experimental and control groups were determined during the first 2 weeks of the school year and three levels of reading ability were established for each group.

Teachers, whether assigned to experimental or control groups, were selected for participation on the basis of their excellence in teaching. They took part in workshops in preparation for the nongraded program and all received the assistance of a reading consultant in selecting materials, carrying on their programs, and observing and assessing pupils for placement in reading groups.

Nongrading for the experimental group proceeded on a year-by-year basis; children moved from reading level to reading level according to their performance. There was a total of nine possible reading levels through which a pupil might progress during a 3-year period. By the third year, nongrading for grades 1 through 3 would be completed and the designations of first, second, or third grade eliminated.

Pupils in the control group were placed in one of three reading level groups within a conventional graded program and instruction was adapted to the ability levels of the groups. At the end of each school year the entire class, with the exception of those classified as failures, was promoted to the next grade and again subdivided into three reading level groups.

The effects of the nongraded organization on pupil achievement were evaluated at the end of the third semester of the experimental period by use of three achievement tests. The first was the Lee Clark Reading Test, the second and third were the Paragraph Meaning and Word Meaning tests of the Primary Battery of the Stanford Achievement Test.

The investigators concluded that the pupils participating in a nongraded primary organization (all other things being equal) will achieve at a significantly higher level on measures of reading ability and related measures of reading than will pupils participating in a graded organization. Specifically, it may be stated that pupils of all levels of ability achieved at a higher level than pupils in a graded situation. Further, it is concluded that the increased achievement of the participants in the nongraded primary program is primarily related to organizational structure when methods of teaching are held constant.

Joseph W. Halliwell[9] conducted a study to determine whether there would be a significant gain by primary grades after a variation of the nongraded primary unit had been introduced. Comparing the spring achievement test scores of 149 graded and 146 nongraded second- and third-grade pupils in a school which gradually introduced nongradedness over a 2-year period, Halliwell's findings were: (1) Significant differences at the 0.01 level of confidence in favor of the nongraded group were found in word knowledge and in reading comprehension of the first-grade children; (2) with the second-grade group, although the nongraded pupils achieved higher scores in all subjects, only in the area of arithmetic was the difference significant at the 0.05 level; and (3) with the third grade, higher achievement scores were made by nongraded groups in every subject, but the differences were significant only in arithmetic and in spelling at the 0.01 level and in arithmetic problem solving at the 0.05 level of confidence. Halliwell concludes: "In the light of the findings of this investigation it would seem that a nongraded approach to the teaching of reading and spelling has proved quite effective and is worthy of further investigation."

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[8] Maurie Hillson and others. "A Controlled Experiment Evaluating the Effects of a Nongraded Organization on Pupil Achievement," *The Journal of Educational Research,* Vol. 57, July–August 1964. p. 548–550.

[9] Joseph W. Halliwell. "A Comparison of Pupil Achievement in Graded and Nongraded Primary Classrooms." *The Journal of Experimental Education, XXXII.* 1:59–64, Fall 1963. See also: Stuart E. Dean. "Nongraded Schools" *Education Briefs.* No. 1 OE–20009, July 1964, p. 22.

Relative to evaluation of nongradedness, Stuart E. Dean[10] points out some practical considerations: "Few, if any, truly nongraded schools exist. We presently are in a preliminary period, a transitional stage, an anticipatory approach to a full scale trial of nongradedness . . . we shall need a great deal of data and evidence over the passage of time, in developing judgments and conclusions."

Always important to consider is the central role of the teacher in the nongraded as well as in any organizational plan. The style of organization is essentially operational. In and of itself it does not automatically promise improvement in instructional practice.

Lillian Gore[11] reports on the nongraded primary unit as it is practiced in 10 school systems she has visited and in 28 systems whose material she has studied. Statement from her report follows:

Whatever term a school system uses to refer to the unit—whether primary unit, nongraded primary schools, continuous progress plan, primary cycle, or another—all plans tend to embody these basic features:

1. They put into practice a philosophy that values each child as a person in his own right.
2. They eliminate grade names and all they stand for.
3. They facilitate the continuous progress of a child and attempt to offer him appropriate sequence of learning at his own rate.
4. They eliminate nonpromotion.
5. They place children in flexible groupings to promote their development in the best way.
6. They require the understanding and support of both teachers and parents.

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[10] Stuart E. Dean. "Nongraded Schools" *Education Briefs* No. 1. OE 20009, July 1964. p. 20.

[11] Lillian Gore. "The Nongraded Primary Unit" Reprint from *School Life*, March 1962.

Chapter VIII

Need for Flexibility in Grouping

Flexibility in grouping children in the elementary school seems essential in order to meet changing needs of children and to accomplish a number of different purposes. Evidence indicates that heterogeneously grouped classrooms furnish opportunities for different types of group experiences. As Olson[1] explains:

> Informal and flexible grouping within a class are often efficient since different small groups can take up a particular phase of a total topic and then the outcomes can be shared by all. Often a project is of such character that only a limited number of pupils can work on it at a given time. The small group also permits maximum particpation of the pupils within a class.

Providing learning opportunities to meet individual differences within a classroom has been common practice in many classrooms for a long time. Books representing a wide range of reading levels normally span at least 4 or 5 years. Problems or topics for study are developed so that the use of books and other resources on different levels of difficulty and value are required. The slow learners in a fifth-grade room, for example, find it possible to learn from and contribute to a study of electricity, or space travel, or the effects of antibiotics on the Nation's health, because they are not limited to the use of books and other materials on one grade level. To a growing extent in classrooms such as these, each individual has a chance to progress at a rate more in keeping with his own ability.

In recent years many other ways of grouping children have been recognized in relation to their effects on pupil learning. These include grouping based on special difficulties, special talents, interests, and concerns, committee responsibilities, and friendship. Moreover many teachers appreciate the need of providing opportunities for children to learn how to work effectively in groups.

Grouping based on special difficulties.—Some grouping within a classroom may center upon certain special difficulties, usually short term. Three or four children in a class, for example, may encounter trouble in handling calculations that involve placement of the decimal point in long division. While other pupils are working problems on "their own," the teacher works with the group of three or four who have indicated need for extra help. An additional 10 or 15 minutes of clarification may be all that is required, although some groups may want extra help over a period of several days or longer.

Groupings based on interests and concerns.—The central focus of many groupings is upon interests and concerns. As Wilhelms[2] reports:

> By and large, interest is proving to be a far more valid criterion than was earlier supposed. A lad of limited reading ability and intelligence, may nevertheless stand the pace of faster classmates and make real contributions if he is keen for the project in hand. Probably, too much grouping is based on some "what" (a test score, e.g.), while the main factor in much of learning is a "why."

Working with others in group situations.—Much of what has been said earlier about grouping children for instruction has been in reference to its effects on achievement in the skills (reading, language usage, arithmetic, etc.), as measured by standardized tests. Helping children learn to work responsibly and effectively in group situations—how to be chairman of a group, how to share information and ideas, how to work together toward accomplishment of common goals—is also an important function of education in a democracy.

In classrooms centering around units of work, many of the groups operate as committees. The class takes part in planning the project, task forces are developed to carry it out. All kinds of criteria are brought into play—ability, special interest, needs, children's feelings, congeniality, and friendship. The typical committee will contain considerable diversity not only in general intelligence but in almost any variable. A group of this nature often has an inner cohesion which will hold in the face of great difficulties, but if merely "put together" by a teacher, it might come apart in her absence.

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[1] See Willard C. Olson. *Child Development.* Boston: D. C. Heath, 1959. p. 432.

[2] Wilhelms, op. cit. p. 14.

Chapter IX

Sociometric Grouping

A. *Sociometric Patterns of Sixth-Grade Pupils in Ability and Heterogeneously Grouped Classrooms*

The purpose of the study[1] was to compare the effects of ability and heterogeneous grouping in the sociometric patterns among sixth-graders in two separate school systems in Leesport, Pa. One school, the Wilson G. Sarig, was grouped heterogeneously, whereas the other, the Bern School, grouped pupils by ability in accordance with general school achievement and intelligence. The median IQ's of both schools were approximately the same, both utilizing the Otis Test of Mental Maturity to measure intelligence. The general socioeconomic environments of the communities appear similar, basically middle and upper-middle income families.

A sociometric questionnaire containing 20 questions was prepared and administered to 86 sixth-grade pupils at the Bern School and 112 sixth-grade pupils at the Sarig School. Selected questions in the questionnaire were used to plot three sociographs from which some of the series of tables were organized on a percentage basis in order that the data collected could be more readily understood and interpreted. Responses to the following questions were used to plot the three sociographs.

Answer only *one* of the following questions:

a. Is your closest friend in the *same* room with you? ______

b. Is your closest friend in another room?___
Name three (3) other close friends in your school:

Name a friend	*Grade, section*
1. __________	__________
2. __________	__________
3. __________	__________

c. If you need help on a "tough' arithmetic problem, whom would you contact *other than* your teacher?

The following conclusions were drawn from this study:

1. No apparent differences could be found when comparing the social structure of the ability-grouped classrooms at Bern School with those of heterogeneously grouped sixth grade in the Sarig School.
2. Ability grouping does not necessarily limit a child in his relationships. There is a strong tendency toward the "bright" selecting the "bright" as friends and the "dull" selecting the "dull." This is especially true if we consider the mutual friendship involved in this study. This finding seems to refute the arguments against ability grouping on the basis that the "slow" child may never have an opportunity to become friends with the "bright" child when both are segregated into separate classrooms.
3. Pupils do not necessarily choose "bright" pupils for help with difficult lesson problems as has many times been assumed nor do they always choose a close friend for such help.
4. The study seems to indicate that pupils in the Bern School (experimenting with ability grouping) were more readily aware of their ability. They tended to place themselves in the "high" group.
5. This survey, in respect to problems that concern sixth-grade pupils in these two schools, seems to show no appreciable differences. From the response offered, we may conclude that the type of pupil classification practiced in a given school neither adds nor

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[1] Adapted from Francis R. Deitrich. "Comparison of Sociometric Patterns of Sixth-Grade Pupils in Two School Systems: Ability Grouping Compared with Heterogeneous Grouping," *The Journal of Educational Research*, Vol. 57, July–August 1964. p. 507–513.

detracts from the personal concerns expressed by the pupils.

B. *Effects of Sociometric Techniques for Forming Groups*[2]

This study concerns itself with investigations of the effectiveness of the sociometric technique for grouping pupils for arithmetic and with the uses of the sociometric technique to measure certain socialization processes among the children as these processes are related to the instructional program. This study involved the fifth-grade classes in a large elementary school in Baltimore. There were two experimental classes in which the program was modified to the extent that for arithmetic and playtime activities the groups formed in each classroom were developed on the bases of sociometric choices of the children. There were two control classes in which no changes in the usual pattern were made.

As a part of the regular citywide testing program in September all children were given standardized intelligence, reading, and arithmetic tests. The arithmetic test was administered again in June to the classes involved in the study. Other data were obtained through observations and recordings in the classroom.

The hypotheses[3] set up for exploring implications of the sociometric procedures follow:

1. The children will achieve more, as measured by standardized tests, in groups they choose for themselves than they will in teacher-formed groups.
2. Children in number work groups formed by their own choices will have a wider range of scores on standardized tests than the children in groups formed by their teachers on the basis of diagnostic tests and the needs evidenced by the children in their daily number work periods.
3. The children working in groups of their own choice will be more responsive than children working in teacher-formed groups.

To explore implications concerning certain socialization processes among children, three additional hypotheses were set up:[4]

1. The choices for number work groups will follow the subculture patterns of the classes.
2. There will be significant agreement between the children's choices for number work companions and their choices for playtime companions.
3. There will be consistent patterns in the children's choices of number work companions.

Insofar as possible, with the exception of the sociometric basis for grouping the children in arithmetic in the experimental classes, the usual program of the classes was not altered. In the Baltimore public schools, the arithmetic program is guided by a curriculum release, *Arithmetic in the Elementary School.* This guide was devised by the staff and is common to all classes in the system, including experimental and control classes involved in this study.

The uses of the sociometric technique for the formation of the arithmetic work groups posed some specific, new problems for the teacher of the experimental groups, on which the investigator[5] reports as follows:

> 1. How does the teacher help each child in the group have a meaningful experience when the standardized test results show a range up to 3 years, 6 months between the lowest and the highest achiever?
> 2. How is a "unit" or center of interest determined for a group which is organized because the members have chosen to be together for social reasons?
> 3. What provisions should be made in the group for the children who are at the extremes of the range and who may (1) be exposed to material for which they are not ready or (2) be exposed to material that has been mastered?
> 4. What motivates children to work in the situation which is playlike in the aspect of freely chosen companionship?

Relative to the methods used by the teachers to deal with such problems, the investigator[6] reports:

> The special problems were met as the teachers helped the children to build acceptable group membership and to grow in independent self-determination. Typically, each teacher

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[2] Adapted from John A. Schmid, Jr., *A Study of the Uses of Sociometric Techniques for Forming Instructional Groups for Number Work in the Fifth Grade.* Unpublished doctor of education thesis, Institute for Child Study, University of Maryland, College Park. 1960.

[3] John A. Schmid, Jr., *Abstract of, A Study of the Uses of Sociometric Techniques for Forming Instructional Groups for Number Work in the Fifth Grade.* Unpublished doctor of education thesis, Institute for Child Study, University of Maryland, 1960.

[4] *Ibid.*

[5] *Ibid.*, p. 58–59.

[6] *Ibid.*, p. 59.

used some of the following as needed in the lessons:

1. Oral-number work
2. Child-help-child techniques
3. Written work graded from least to greatest difficulty
4. General work assignment to supplement group work
5. Individual assignments, reports, exercises
6. Graded drill work

Sociometric test procedures were used only in the experimental group and there only for the purposes of grouping for arithmetic work or choosing teams for activities in the physical education program.

Two forms of the test were used. The first, for the formation of the number work groups, contained one sentence: *With whom do you wish* to do your arithmetic work?; the second, for physical education activities, also one sentence: *With whom do you wish to play on a team* (in a game)?

The data secured through the tests were used to plot sociograms which guided the formation of the actual groups. As the children were grouped, they were asked to notice that they were now seated or working among those other children with whom they had chosen to work or play.

The concerns and investigations of this study were in two areas: (1) implications for the instructional program; and (2) implications associated with the socialization processes among children. The hypotheses set up in each area are restated and findings are summarized as follows:[7]

Findings concerning achievement.—The children will achieve more, as measured by standardized tests, in the groups they form for themselves than they will achieve in teacher-formed groups.

The statistical treatment of the data from the test scores gave evidence that:

1. The average gain in achievement in the control classes was 9 months, and the average gain in achievement of the experimental classes was 15 months.
2. The patterns of gains for the classes were similar in respect to reasoning and computation.

The study made use of the information available through the regular testing program. Standardized test scores of intelligence, reading, and arithmetic were used for these purposes: to determine at what level the children in the classes were fair samples of the same population and, thus, to delineate the bias of the study; to establish the limits, range, and means of the child population in order to orient teachers, researchers, and interpreters of the study; to provide the data necessary in the testing of the hypotheses concerning the curriculum implications of the study.

At the beginning of the study, the teachers of the control group (two classes) were told that their classes (fifth grade) were part of the study and that the results of the standardized tests given in September would be part of the data. They were informed that periodically the classes would be observed during arithmetic work periods. The classroom organization of the control classes was not questioned or suggested for the purposes of the study. Methods and procedures and the content in the area were left to the discretion of the teachers.

The experimental group comprised two classes; one-half of the fifth-grade population worked independently of the control group. The study as conducted in the experimental group affected only the arithmetic work periods. The routine teaching procedures, grouping procedures, and methods in all other areas of the curriculum together with the testing program were not disturbed. The teachers agreed to utilize sociometric test choices for their number work groups at least 40 percent of the class time. They reserved the right to teach and/or test the class as a whole and to employ some time for remedial or recreational work with the children in groups formed by teacher judgment.

Findings concerning the range of children in groups formed by sociometric test choices.—Children in number work groups formed by their own choices will have a wider range of scores on standardized tests than the children in groups formed by their teachers on the basis of diagnostic tests and the needs evidenced by the children in their daily number work periods.

1. The chi-square test revealed a significant difference between the medians of the ranges of the groups formed by the teachers and the ranges of those groups formed on the basis of sociometric tests.
2. The grand median for all groups was 1 year, 5 months.
3. The median for the teacher-formed groups was 1 year, 4 months, and 1 year, 9 months for the sociometric test-formed groups.

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[7] Adapted from John Schmid, Jr., *A Study of the Uses of Sociometric Techniques for Forming Instructional Groups for Number Work in the Fifth Grade.* Unpublished Doctor of Education Thesis, Institute for Child Study, University of Maryland, 1960. p. 143.

4. The mean of the ranges for the teacher-formed groups was 1 year, 5 months; the mean for the sociometric test-formed classes was 2 years, 1 month.

Findings concerning responsiveness.—The children working in groups of their own choice will be more responsive than children working in teacher-formed groups.

1. There was a greater volume of voluntary response in the sociometric test-formed groups.
2. The children in the sociometric test-formed groups made a greater percent of the possible responses.
3. The average per-child-per-question response was greater in the sociometric test-formed groups.

Findings concerning socialization processes among children.—The socialization processes which are effected among children through the peer group are difficult to study and understand. By definition the peer group world is the children's private world; the presence of an adult, teacher, or observer destroys it. To observe it properly, the researcher must not participate in any activity involving the children or even permit them to be aware of the observation. The peer group processes which have been considered as part of this study, then, have been modified by the teachers' presence. It is assumed, however, that the dynamics of the peer group milieu have operated on the children and have been reflected to some degree in their sociometric choices despite the implied interference. Through their observable behavior the children have given clues to the teachers for using the implications of the peer group dynamics in handling the classes.

Findings concerning subculture patterns.—The choices for number work groups will follow the subculture patterns of the classes.

The study found that the choices were associated with the white-Negro subculture patterns.

Findings concerning work and playtime companions.—There will be significant agreement between children's choices for number work companions and their choices for playtime companions.

The study found significant agreement of the work and playtime choices for these children.

Findings concerning consistent patterns of choices.—There will be consistent patterns in the children's choices of arithmetic work group companions.

The study found statistically significant patterns of consistent choices of one child for another in terms of choosing to work a second, a third time, or more often with the same companion.

Concluding Statements[8]

The impact of socialization on the personalities of children seems apparent. There is need to know the degree to which socialization makes a difference in the growth and development of children's potential. The importance of increased understanding of social factors in dealing with today's problem is recognized in the following quotation: "Albert Schweitzer, one of the supreme humanitarians of the present era, was reported as telling Adlai Stevenson that the present time is the most dangerous in human history because man is no longer controlled by nature: man has learned to control the elemental forces before he has learned to control himself."

The purpose of this research was to study the effectiveness of sociometric groupings of children in fifth-grade classrooms in their study of arithmetic. Social factors were measured through the use of sociometric tests; academic achievement was measured through use of standardized tests. For the population of the school involved in the research there was evidence to support the following statements:

☐ The children will achieve more when given some volition in choosing the companions with whom they work and play.

☐ The children will choose to work in groups that are more heterogeneous than the groups the teachers choose for them.

☐ The groups chosen by the children using only the criterion, "I want to work with..................," are workable, teachable groups.

☐ The children are more responsive in groups they choose for themselves than they are in the groups the teachers form for them.

☐ About half the time children will choose to work and play with the same companions.

☐ The patterns of the children's choices for work companions were significantly consistent.

☐ The patterns of the children's choices for work and play companions did not follow the color subculture patterns of the classes.

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[8] Ibid, p. 163–164.

Chapter X

Social and Emotional Development

A. *Effects of Grouping Procedures on Social and Emotional Development*

Much of the research on grouping in relation to pupil achievement has not included attempts to determine the effects of different grouping procedures on the development of attitudes, aspirations, self-concepts, interests, and other factors usually recognized as significant in the social and emotional development of pupils. However, reports of a few such studies and the judgments of leaders in the field follow:

A study of accelerated, normal progress, and retarded children was made for the purpose of examining factors relative to their social and emotional adjustments.

A. A. Sandin[1] found an average intelligence quotient of 111 for children who had been promoted regularly, 91 for those who had 1 year of retardation, 85 for those with 2 years retardation, and 76 for those with 3 years of retardation. The social, behavioral, and emotional impact of overageness was examined through use of sociometric tests, behavior ratings, and interviews. The retarded child, on the average, is significantly more likely to choose companions in grades ahead and indicated he would like to join them there. This is true, to a lesser extent, of regularly promoted children. Those who made a slow progress tended to regard their younger classmates as inappropriate companions when identifying friends they would like to be with.

Social approval of retarded pupils by regularly promoted pupils was seldom given. Teachers on behavior *inventories* rated slow-progress children in their classes less favorably than those in the normal-progress group. Children themselves were inclined to describe slow-progress children as unhappy, grouchy, quarrelsome, rude, and selfish. Sandin formed the impression during his study that repeaters were not as unsocial as they seemed to be in the artificial grade groupings.

Interview data tended to corroborate other findings. Retarded children verbalized their feelings of dislike for those who always received the best marks. Teachers as well as children had the impression that the retarded child was less concerned about school marks than the others. However, Sandin found that the outward indifference was misleading. Eighty-three percent of the repeaters worried about nonpromotion as compared to 56 percent of the others. Children who had previously failed said that their parents had been angry. They claimed that they had been spanked, labeled as not very smart, and lectured on the need for studying harder. Their shortcomings had been criticized by brothers, sisters, and relatives. Forty-eight percent of slow-progress children indicated that their parents were not satisfied; 17 percent of the normal-progress children indicated dissatisfaction from their parents. Thirty-one of the 34 nonpromoted pupils of the previous year reported feeling bad; 9 said they cried about it; 3, having expected failure/ didn't feel too bad.

Sandin concluded that nonpromotion is not the avenue for providing a better learning environment and education for children who, for a variety of reasons, fail to achieve grade standards or live up to teacher expectations.

Effects of an homogeneously grouped classroom on social development of slow learners.—As reported earlier, a program designed especially to meet the needs of culturally deprived primary children who had been unsuccessful in the past grade showed favorable gains in academic achievement as well as in social and emotional development. As a result of the program Liddle and Long[2] observed that the children seemed happy and eager to learn. The parents also caught the feeling of accomplishment when their children came home happy about their day at school.

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[1] Adapted from A. A. Sandin, *Social and Emotional Adjustment of Regularly Promoted Pupils.* New York: Bureau of Publications, Teachers College, Columbia University, 1944.

[2] Adapted from Gordon Liddle and Dale Long, "Experimental Room for Slow Learners," *The Elementary School Journal,* Vol. 59, December 1958. p. 143–149. Copyright 1962 by the University of Chicago Press.

Results of the California Test of Personality showed gains in several areas: the children's sense of personal worth had been enhanced, feelings of belonging, had increased, and greater freedom from antisocial tendencies was indicated. In some areas, there was little change. No changes were found in the social standards score; self-reliance score remained above average. The authors pointed out the fact that a friendly approach by the school made a vast difference in the lives of the boys and girls.

Effects of continuous failure on emotional development.—A study of the effects of nonpromotion on pupil learning conducted by Ayers[3] and reported earlier in this bulletin called attention to the fact that repeating grades did not usually increase a pupil's mastery of subject matter. Furthermore, effects of continuous failure upon emotional development of children were noted. Ayers concluded that: "Success is necessary to every human being. To live in an atmosphere of failure is not a matter of intellectual attainment, not an intellectual matter at all, but a moral matter."

Effects of multigraded grouping on social and emotional development.—Helping each child realize the full potential of his intellectual capacity is generally recognized as an important goal. Evidence offers reason to question the persistent belief that reducing the range of abilities in a class will necessarily increase a child's chances to realize his potential. The concept of increasing the range of difference in a class from the more or less typical single-grade class to one of three or more grades is often perceived as undesirable. On the other hand, some of the studies show equally high or higher gains in social and emotional development as well as in academic achievement.

In their study of multigrade and interage grouping, Rehwoldt and Hamilton[4] compared social behavior gains of the multigrade pupils with gains of pupils in single grade situations. The instruments used to measure gains included social maturity scales, behavior description charts, social acceptance scales, a friendship test, a personality test, and attitude questionnaires. On the average the highest gains were made by the pupils in the multigrade and interage groups.

Attitudes of pupils, parents, and teachers toward ability grouping.—A survey was made by questionnaire of attitudes toward homogeneous groups according to ability in cities where this method was used. Sauvain[5] found evidence among parents for approval of ability grouping, especially if they had children in the higher or brighter sections. Parents with children in the lower sections said that they were at times moved to carry their grievances to the principal. These parents also either concealed their knowledge that their children were in slow groups, or did not actually realize the fact. Parents who know and admit that their children are in slow groups are more opposed to grouping than parents of other children in slow groups. The survey also revealed that teachers seem to like ability grouping somewhat more than do the parents, but they expressed preference for teaching bright and average ability groups. Slow groups tended to be unpopular with teachers.

Luchins and Luchins[6] made a study of children's attitudes toward ability grouping. Interviews with 190 children showed that they felt their parents wanted them to be in a top ability group. If they were in a "bright" group, they preferred to be there even if they did not like the teacher. Children in two low-ability groups said they were willing to have a poor teacher if only they could be in the "bright" group. The investigators concluded that children classed as "dull" felt stigmatized and that the "bright" ones were snobbish about their status in the top group.

B. *Grouping and the Development of Self-Concepts*

Increased knowledge and understanding of a perceptual approach to learning and human behavior are helping us to gain new insights and to identify more clearly a number of factors that seem to make a difference in what we learn, how much, and how well. Among other things the perception psychologists stress the importance of a healthy self-concept to efficiency in learning. Since self-concepts are also learned, it seems reasonable to believe that the school has a chance to help children develop positive views of themselves. As Combs[7] points out:

> A fundamentally positive view of self seems to give individuals a basic strength for dealing with life . . . Because they see themselves positively, they do not have to be so defensive; and as a consequence, they are quite likely to see

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[3] Leonard P. Ayers. *Laggards In Our Schools.* New York: The Russell Sage Foundation, 1909.

[4] Adapted from Walter Rehwoldt and Warren W. Hamilton, "An Analysis of Some of the Effects of Interage and Intergrade Grouping in an Elementary School." Final chapter of dissertation, Univ. of Southern Calif., January 1957.

[5] Adapted from W. H. Sauvain, *A Study of the Opinions of Certain Professional & NonProfessional Groups Regarding Homogeneous or Ability Groups.* New York: Bureau of Publications, Teachers College, Columbia University, 1934.

[6] H. S. Luchins and Edith H. Luchins. "Children's Attitudes Toward Homogeneous Groupings," *Journal of Genetic Psychology*, Vol. 2, 1948. p. 3–9.

[7] Arthur Combs. "Personality Theory and Its Implications," *Learning More About Learning.* Washington: Association for Supervision and Curriculum Development, 1959. p. 16.

> things more clearly than other people. They are more likely to be right . . . Such a secure feeling makes it possible for them to be less frightened by what is new and different.

Granted that the development of a positive view of self is open to teaching, and that a positive concept of self is recognized as a significant factor in helping a child achieve his best, how can teachers best provide the kinds of learning opportunities that facilitate progress toward this end? More specifically, for our purpose here, is there a relationship between grouping children according to ability and the self-concepts they learn?

In response to the question it seems reasonable to assume that correct answers may not be the same in all situations, or for all children. However, the following report throws the spotlight on a number of factors in ability grouping procedures that for many children become blocks in the way of developing healthy self-concepts.

Maxine Mann[8] obtained some self-reports from 102 ability-grouped fifth-graders, which she thought might offer clues to their self-concepts, for the purpose of finding answers to the question, "What does ability grouping do to the self-concept?"

These children were classified into four ability groups upon entrance to first grade. Grouping was based upon results of group intelligence tests and reading readiness tests. The groups were labeled by the teachers' names only. In informal teacher conversations they were sometimes identified as "the highest group," "the lowest group," "second high," "second low."

The information as to how children saw themselves in these groups was obtained through a group questionnaire. The children were told that the writer was making a study to find out what children were thinking. Blank sheets of paper were distributed. Dr. Mann[9] reports the directions to the children as follows:

> Please write a number 1 at the top of your paper. After the number 1 write the grade you are in. Now write a number 2 under 1 and tell me which fifth grade you are in. Now write a number 3 and tell me how you happen to be in this particular fifth-grade group rather than some other group. Now put a number 4 on your paper and answer this question with just a "yes" or "no." Is your very, very best friend in this room? Now write a number 5 on your paper and answer this question with just a number. How many years have you gone to school? Children's answers to questions 2 and 3 were studied.

Among the findings were:

> Forty of the 102 children identified their groups in terms of ability placement, rather than by the teachers' names. Over two-thirds of sections 1 and 4 responded in this way. Fifty-nine identified their groups by their teachers' names.

The reasons these children gave for their placement, as Mann reports, helped to bring their self-reports into clearer focus. Such responses as "I'm smart," "We're smarter," "I'm too dumb," "We don't know very much," account for half the answers to the third question.

In section 1, 25 children gave positive responses in terms of ability or achievement, 21 in positive "I" terms. No negative responses were made in this group . . .

In section 4, the lowest, all of the 14 responded in terms of ability or achievement. All gave negative responses . . .

In commenting on the results of the study, Mann[10] says in part:

> What are the experiences which have contributed to the way the children in the "top" and "bottom" groups see themselves? Could teacher rejection of the low groups and acceptance of the high group help account for it? . . . Before we grasp the straw of ability grouping as the answer to instructional problem brought about by individual differences in academic potentiality, we need to reexamine what has already been done with ability grouping.

C. *Grouping and Social and Emotional Adjustment*[11]

This study is concerned with the effect of heterogeneous and homogeneous grouping plans upon the social-emotional adjustment of pupils. A statement of the problem follows: To compare the responses of heterogeneously and homogeneously sectioned sixth grade children to a questionnaire dealing with (a) their relationships to other pupils and to the classroom group, and (b) their school success and achievement.

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[8] Adapted from Maxine Mann. "What Does Ability Grouping Do to the Self-Concept?" *Childhood Education*, Vol. 36, April 1960. p. 357–361.

[9] *Ibid.*, p. 358.

[10] *Ibid.*, p. 359.

[11] Review of report by Milly Cowles, "A Comparative Study of Certain Social and Emotional Adjustments of Homogeneously and Heterogeneously Grouped Sixth Grade Children," Unpublished Ph.D. dissertation, University of Alabama, 1962. 310 p.

The subjects of the study were sixth-grade pupils in six elementary schools in Mobile, Ala., heterogeneously grouped in three schools and homogeneously grouped in three schools. The pupils in both groups responded to a questionnaire which dealt with the way they viewed their relationships with their classmates and with the group and asked if they felt challenged and successful in regard to their school work. An analysis and comparison of the responses of the homogeneously and heterogeneously grouped pupils provided information relative to the social and emotional adjustment of children under the two different types of school organization plans.

A questionnaire was devised in which children could choose statements which best suited them. In the 21 groups of 3 items or statements included in the instrument, there were 11 groups of 3 items in Area A (their relationships to other pupils and the classroom group) and 10 groups of 3 items in Area B (their success and achievement). Each group of items had one which was positive, one neutral, and one negative. The positive item in each group represented a point of view favorable to social-emotional adjustment and the negative item represented an unfavorable point of view. The questionnaire was administered to the 100 sixth-grade pupils in the middle of the year. After a period of 3 weeks, the pupils responded to the questionnaire for the second time. The following statements taken from the questionnaire illustrate the types of questions included for both Areas A and B described above.

> *Directions.*—Place a check (✓) in front of the sentence in each group of sentences which suits you best.
>
> 1. _____ The boys and girls in my classroom are friendly with one another most of the time.
>   _____ The boys and girls in my classroom are friendly with one another some of the time.
>   _____ The boys and girls in my classroom are friendly with one another a little of the time.
> 2. _____ I like to do very little of the work we do in this classroom.
>   _____ I like to do most of the work we do in this classroom.
>   _____ I like to do some of the work we do in this classroom.
> 3. _____ I have learned a lot in school this year.
>   _____ I have learned an average amount in school this year.
>   _____ I have learned very little in school this year.
> 4. _____ I like to work in groups with the boys and girls most of the time.
>   _____ I like to work in groups with the boys and girls very little of the time.
>   _____ I like to work in groups with the boys and girls some of the time.
> 5. _____ If I gave a picnic I would like to invite most of the members of my class.
>   _____ If I gave a picnic I would like to invite some of my classmates.
>   _____ If I gave a picnic I would like to invite very few of my classmates.
> 6. _____ The schoolwork in my class is sometimes too hard.
>   _____ The schoolwork in my class is too hard to do a lot of the time.
>   _____ The schoolwork in my class is just right, not too hard nor too easy.

Conclusions of the study follow.

The questionnaire responses of the homogeneously grouped children (as a total group) seem to indicate more favorable adjustment to other children and schoolwork than was shown for the heterogeneously grouped children (as a total group).

1. Analysis of variance showed statistically significant differences in favor of homogeneously grouped children on total scores, children's relationships to other pupils and the classroom group (Area A), and children's school success and achievement (Area B).

2. There appeared to be as much, if not more, difference from class to class in each organizational plan than was found between the two large organizational plans.

Analysis of variance yielded differences which were highly significant from class to class in each of the two organizational plans for total scores, children's relationships to other pupils and the classroom group (Area A), and children's school success and achievement (Area B). Means for classes in each plan arranged in rank order showed a wide difference from class to class in each plan.

3. The "low" or "middle" ability classes in homogeneously grouped schools seemed to be less well adjusted than their more highly sectioned peers. The "highest" and the "high" ability homogeneously grouped classes tended to have higher adjustment scores which contributed to the significantly higher

mean for homogeneously grouped children as compared with heterogeneously grouped children.

4. The responses of children in different classes in each homogeneously grouped school were more alike than the responses of the children in different classes in each heterogeneously grouped school for total scores, children's relationships to other pupils and the classroom group, and children's success and achievement. Analysis of variance showed statistically significant differences most frequently among classes in the heterogeneously grouped schools. Significant differences were found less often among classes in the homogeneously grouped classes.

5. One heterogeneously grouped school seemed to have particularly influenced the results obtained; this school had the lowest and the highest responses from heterogeneously grouped schools.

6. The responses of boys and girls were quite similar with the exception of the responses given toward school success and achievement. The girls seem to show better adjustment in this area.

7. In all comparisons of the responses to the questionnaire items, much more similarity than difference of responses was found.

8. Such differences as were found for individual items tended to deal with adjustment to peers rather than to school success.

9. The homogeneously grouped boys and girls appeared to be better adjusted than the heterogeneously grouped boys and girls in regard to the questionnaire items which showed significant differences in percents of response.

In the comparison between children in both plans of organization (homogeneous and heterogeneous) the preponderance of the most favorable questionnaire items which showed significant differences between percents of response were chosen most often by the homogeneously grouped boys and girls. The same results were found when the homogeneously grouped girls were compared with heterogeneously grouped girls and homogeneously grouped boys, with heterogeneously grouped boys.

10. The girls involved in the study had more favorable responses and appeared to be better adjusted than the boys in regard to individual items in the questionnaire.

Comparison between homogeneously grouped boys and girls showed that girls made more favorable choices than the boys did. Likewise, the comparison between the heterogeneously grouped boys and girls indicated that the girls made a greater number of favorable responses than the boys.

Recommendations for future research.—The results of this study suggest some other investigations such as those recommended below:

1. A similar study in which children from all grade levels involved in homogeneous and heterogeneous classes were studied to determine their social and emotional adjustment would be desirable.

2. A study comparing children in homogeneous groups to children in classes in which instruction is individualized would provide information of value.

3. A study in which teachers are selected after taking an attitude inventory in order that teacher attitude could be controlled to some degree might yield different results.

Chapter XI

Development of Human Potentialities

Leaders in the field contend that rigid grouping systems are violative of the human rights as well as the civil rights of children. Grouping of children should take into account citizenship and human relations goals as well as academic objectives. Some maintain that the power structure through the ability grouping system tends to siphon off rapid learners from the main stream and keeps slower students from advancing. The "track" system, for example, conditions the slow learner to a belief in his inadequacy.

In a discussion about grouping and related factors, Melvin Tumin[1] indicated that grouping students by ability can only serve to retard their progress. Ability grouping, 9-month school years, and competitive grades, he thinks, prevent equal education in the public schools. A child who is working to his maximum capacity, but failing by the grade system, will soon be alienated.

Reports of research and informed judgment about the development of human potentialities will further increase our understanding of what is involved in helping children become their best. What happens in groups should be examined in light of such knowledge, examples of which follow.

Lawrence Kubie,[2] a psychiatrist, calls our attention to three types of failure in the school program. One is failure to *develop spontaneity and creativity:*

> . . . an intensification of the neurotic process through repetitive drill mars our educational system from primary grades through professional and graduate levels . . . Limitless repetition without the necessary insight is not merely self defeating; it does deeper damage by hampering spontaneous, "intuitive," i.e., preconscious functions . . .

A second failure *is to develop deep concern for others.* Calling attention to this factor in relation to the adolescent, Kubie says:[3]

> Perhaps above anything else the adolescent needs not only to be exposed to human suffering, but also to be given responsibility to play a role in ministering to it. At present the educational years cultivate in each student a maximal concentration on himself.

A third failure *is to develop self-knowledge.* About this Kubie says:[4]

> Self-knowledge is not all there is to wisdom and maturity; but it is an essential ingredient which is almost totally neglected.

In a discussion of encouraging possibilities for the future, Alice Miel[5] says:

> Students of creativity are opening up other important facets of human development for the consideration of education. As reported earlier Taylor[6] . . . points out that traditional intelligence tests, yielding the familiar IQ, actually measure only a few, perhaps only one-fifth of the dimensions of the mind. Nineteen other dimensions of the mind were considered by one group of scientists to be more important in their work than the handful of dimensions measured by traditional tests. For example, not included in the IQ tests are ability to sense problem areas, fluency of ideas, or ability to revise one's own

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[1] Melvin Tumin, from a discussion of Ability Grouping reported in *The Evening Star,* Washington: The Evening Star, April 28, 1965. p. B-2.

[2] Lawrence S. Kubie. *Neurotic Distortion of the Creative Process.* Lawrence, Kansas: University of Kansas Press, 1958. p. 122–123.

[3] Ibid., p. 129.

[4] Ibid., p. 134.

[5] Alice Miel. "Trends in Curriculum, Teaching and Guidance," *Children and Youth in the 1960's,* Survey Papers prepared for the 1960 White House Conference on Children and Youth. Washington: Golden Anniversary White House Conference on Children and Youth, Inc., 1960. p. 119.

[6] Calvin W. Taylor. In a report at the Fifth ASCD Research Institute, Washington, D.C. (Dec 5–9, 1959), in *Children and Youth in the 1960's,* Survey Papers prepared for the 1960 White House Conference on Children and Youth. Washington: Golden Anniversary White House Conference on Children and Youth, Inc., 1960. p. 119.

mean for homogeneously grouped children as compared with heterogeneously grouped children.

4. The responses of children in different classes in each homogeneously grouped school were more alike than the responses of the children in different classes in each heterogeneously grouped school for total scores, children's relationships to other pupils and the classroom group, and children's success and achievement. Analysis of variance showed statistically significant differences most frequently among classes in the heterogeneously grouped schools. Significant differences were found less often among classes in the homogeneously grouped classes.

5. One heterogeneously grouped school seemed to have particularly influenced the results obtained; this school had the lowest and the highest responses from heterogeneously grouped schools.

6. The responses of boys and girls were quite similar with the exception of the responses given toward school success and achievement. The girls seem to show better adjustment in this area.

7. In all comparisons of the responses to the questionnaire items, much more similarity than difference of responses was found.

8. Such differences as were found for individual items tended to deal with adjustment to peers rather than to school success.

9. The homogeneously grouped boys and girls appeared to be better adjusted than the heterogeneously grouped boys and girls in regard to the questionnaire items which showed significant differences in percents of response.

In the comparison between children in both plans of organization (homogeneous and heterogeneous) the preponderance of the most favorable questionnaire items which showed significant differences between percents of response were chosen most often by the homogeneously grouped boys and girls. The same results were found when the homogeneously grouped girls were compared with heterogeneously grouped girls and homogeneously grouped boys, with heterogeneously grouped boys.

10. The girls involved in the study had more favorable responses and appeared to be better adjusted than the boys in regard to individual items in the questionnaire.

Comparison between homogeneously grouped boys and girls showed that girls made more favorable choices than the boys did. Likewise, the comparison between the heterogeneously grouped boys and girls indicated that the girls made a greater number of favorable responses than the boys.

Recommendations for future research.—The results of this study suggest some other investigations such as those recommended below:

1. A similar study in which children from all grade levels involved in homogeneous and heterogeneous classes were studied to determine their social and emotional adjustment would be desirable.

2. A study comparing children in homogeneous groups to children in classes in which instruction is individualized would provide information of value.

3. A study in which teachers are selected after taking an attitude inventory in order that teacher attitude could be controlled to some degree might yield different results.

> ideas to produce a more perfect product of one's own.

In relation to development of human potential and the educative process, Gardner Murphy[7] says:

> The explicit education process goes clinking along fairly well, turning out people who can master the three R's and read the newspaper and keep accounts. It can, at the same time, produce such frustration that one cannot somehow get the satisfactions out of life that educated people are supposed to get, and cannot escape the cycle of grumbling competitiveness which keeping up with the Jones demands. Such competitiveness is ingrained as a component, indeed a major component, of the educational process. So is the timidity of a status-minded people.

The need for situations within or outside of groups which help to free a learner's capacity for learning is increasingly considered important. Murphy[8] points out:

> The role of the teacher in relation to human intellectual emancipation is one which emphasizes the biological individuality which evolutionary theory has emphasized. The teacher must help the learner to believe in his own individuality and his capacity to learn.

Meredith[9] reports data from a number of diverse sociometric studies. Several generalizations included the observations that children of high status exhibit more positive behavioral patterns regardless of the grouping patterns used; that there is a general rejection of average children in heterogeneous classroom groups; and that there is a close relationship between academic achievement and social acceptance at grade levels beyond the kindergarten. Meredith also reports, however, that:

> The pattern of authority for decision-making as demonstrated by the teacher has an immediate and strong influence on the kind and amount of involvement and participation which emerges from members of a group. A number of studies have shown clearly that different motivational responses by children can be produced by different patterns of authority relationships, especially as they center about the teacher.[10]

Lippitt, Polansky, and Redl[11] show that members of a group are influenced by the high-powered children in a class. In their relationship with influential classmates, members who are less so tend to exhibit approval seeking behavior. The high-powered members are also the most popular. The teacher must be alert to this power structure among children.

A study by Martin Gold[12] identifies some of the sources from which elementary school children derive ability to influence one another's behavior and participation. These studies indicate that student motivation and participation in instructional groups are directly affected by the authority, social acceptance, and power relationships which become incorporated in the group structure.

The sex composition of an instructional group provides the basis of another type of relationship which develops between members. Composition of group structure is complicated by the fact that this type of relationship has sociological, psychological, and biological aspects. Sociologically, certain behaviors are prescribed for both males and females. Psychologically, men and women will develop both attraction and repulsion to one another sexually. The pattern which develops between members of an instructional group with respect to this type of relationship is likely to influence strongly the group progress, individual achievement, and emotional atmosphere of the group.[13]

Because of the nature of interaction that characterizes the work in a classroom, the teacher is seldom aware of the content of the communication between students or how this may influence the interactions needed for the problem-solving and related work situations. Whether the results develop in a way to affect the problem-solving dimension favorably or adversely depends upon the conditions which shape its development. If it develops because of the need of group members to defend themselves, it is likely to have an adverse effect upon the problem-solving and work interactions of the group.

Some of Thelan's[14] exploratory work on friendship relations dramatically portrays the effect of certain interaction on the problem-solving and work dimensions.

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[7] Gardner Murphy. *Human Potentialities.* New York: Basic Books, Inc. 1958. p. 101.

[8] Gardner Murphy. *Freeing Intelligence Through Teaching.* New York: Harper & Row, Inc., 1961. p. 47.

[9] Cameron W. Meredith. "Personality and Social Development During Childhood and Adolescence," *Review of Educational Research,* Vol. 25, December 1955. p. 469–476.

[10] Ned A. Flanders. "Personal-Social Anxiety as a Factor in Experimental Learning Situations," *Journal of Educational Research,* Vol. 45, October 1951. p. 100–110.

[11] Ronald Lippitt, Norman Polansky, and Fritz Redl. "The Dynamics of Power," *Human Relations,* 1952. p. 37-64.

[12] Martin Gold. "Power in the Classroom," Sociometry, Vol. 21, March 1958. p. 50–59.

[13] Gale E. Jensen. "The Social Structure of the Classroom Group: An Observational Framework," *Journal of Educational Psychology,* October 1955. p. 362–374.

[14] Herbert A. Thelan. "Factors Affecting the Teaching-Learning Process," *Research Notebook,* Human Dynamics Laboratory, University of Chicago, April 23, 1954. p. 21–23.

Increasing our understanding of the factors that affect perception is one of our great tasks in education. Recognition that capacity for learning is possessed in differing amounts among children—the chances for greater potential being available—would help us see increased possibilities for more learning. "Perception is deeply affected," says Combs,[15] "by human need, goals, and values, the self-concept, and the individual freedom from threat."

Implications for education of the perceptual approach to human behavior are unlimited. Realization of the significance of the experience which will free him to learn would be a major contribution to our understanding of the learner and our ability to help him achieve his best. Enabling a child to build a worthy concept of himself and to attach meaning to what he does is a serious responsibility. Toward the accomplishment of such ends, our precedures must be those which we have reason to believe will contribute most.

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[15] Combs, op. cit., p. 13.

Chapter XII

Basic Human Values

A. *Grouping and Human Values*

In the keynote presentation at an Office of Education Conference on Grouping, Alexander Frazier[1] said in part:

> . . . continuous attention given to how best to group children is warranted because we see the group as much more than a center of instruction. How groups are composed, how they are staffed, how their time is scheduled, and how they are expected to operate—we see all these as more than simply details for the school administrator to work out. But what do we think really matters in grouping pupils?

Frazier proposed some considerations for the purpose of broadening the base of our thinking about what really matters in grouping for learning. As he said earlier, a group can be: a resource for learning through its members—information, other values, new ways of behaving; a testing ground for new learning about all kinds of subjects; a creator of common learnings; a context for learnings that depend upon relationships continued in time—planning together, leading, contributing to common ends, and the like; and a kind of culture—a community rather than merely a "collectivity."

"Few persons in the profession or out," says Harold Drummond,[2] "seem willing to face the hard facts of life"—the facts which are evident in the research cited as a background for the conference. "What happens after groups are formed is of greater significance than who is excluded from or included in the group."

We as a people, Drummond tells us, seem willing to spend millions of dollars on developing television so that the influence of the master teacher can be spread widely, developing programed materials for use at school and at home, and trying new organizational schemes. We are not willing, on the other hand, to spend equal amounts to reduce the size of classes to about 20 pupils per teacher—a procedure which would make true individualization possible. Drummond continues:

> The hard facts of life are that we have never really tried—on a large scale—to provide a spacious classroom, a well-educated teacher, a rich base of learning materials and supplies, and good consultant services for every 20 youngsters. Yet every time we have tried to provide an organizational scheme superior to the grouping of pupils of different ages . . . we have stubbed our toes badly . . .

Among recent theories about learning is one commonly identified as a perceptual approach to human behavior. As Combs explains:[3]

> . . . how a person behaves is a function of his perceptions. Effective, efficient behavior, therefore, will depend upon the nature of the individual's perceptual field. If his perceptions are extensive, rich and highly available when he needs them, then he will likely behave in effective, efficient, intelligent ways.

What does this mean in relation to helping learners learn? For some of us, it might mean a new way of looking at an individual's capacity for intelligent behavior. We might see such a capacity as being dependent upon the state of the individual's perceptual field. A way of helping a learner would be to seek ways of helping him perceive more extensively and more richly. Again quoting Combs:[4]

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[1] Alexander Frazier. "Learning in Groups: Some Considerations," *Grouping Children for Instruction in the Elementary School: A Conference Points the Way.* Reprinted from *School Life* (June, July, December 1963 issues). OE–20062. Washington: U.S. Government Printing Office, 1964. p. 7–9.

[2] Harold Drummond. "Grouping: A Preliminary Statement," *Grouping Children for Instruction in the Elementary School: A Conference Points the Way.* Reprinted from *School Life* (June, July, December 1963 issues), OE–20062. Washington: U.S. Government Printing Office, 1964. p. 9–10.

[3] Combs, op. cit., p. 12.

> It means that human capacities are perhaps not as limited as we have been inclined to think. If human capacities for intelligent behavior are dependent on perception then they are far more open to change than we have ever supposed. Indeed human perceptions are so much within our capacities that we may even be able to create intelligence by helping people perceive more extensively and more richly and by creating situations that make it possible for these perceptions to be available when needed.

There was general agreement among the conferees that more information is needed which will throw light on the pupil's perception of himself and the effect on it, if any, of different organizational structures and grouping plans. We need more experimentation directed at determining the optimum conditions for pupils of different ages to learn effectively in nongraded, self-contained classrooms, and the kind and number of teachers needed.

Consideration of human values is essential in a program of education in a democracy, a form of government committed to the ideal of individual human worth. Julia W. Gordon[5] insists that our best interests as a Nation and as individuals are bound up in the view of the worth of every human being. Yet, in practice we fall far short in ability to demonstrate adequate concern for individual human beings. Our basic task must be to create conditions and provide opportunity for experiences and relationships that will insure the sound mental and emotional development of each individual.

Several conference members proposed ideas and questions in relation to concepts dealing with human values. John D. Greene[6] raised the question, *Is the focus on program or on people?* He identified the concepts involved as follows:

> What a person believes and subsequently does about grouping depends to a great degree upon his basic orientation. If a person places primary emphasis on a program and sees the needs of people as less important than the programs, it generally follows that what he does about grouping will reflect a basic orientation to the program. The program becomes the important thing. On the other hand, if a person places emphasis on people—which means the focus is on boys and girls—and if he sees the program as secondary, or as a means of helping boys and girls in their becoming, then his actions will reflect a basic concern for the children.
>
> Said another way, if the program is of major concern, then the boys and girls as individuals may get caught in the mechanics of forming groups with harmful outcomes to them as a result. However, if a teacher's primary concern is for boys and girls, he will find ways of adjusting the mechanics of grouping in light of individual needs. The basic orientation of the persons working with the children can make a major difference in their approach to learn needs of children, regardless of the school's pattern of organization.

B. *Mental Health*

Despite the abundance of research evidence indicating that one grouping pattern seems no more likely than another to show greater achievement gains, ways of grouping children for instruction continue to draw the attention of nearly everyone who may have any interest at all in educating the young. Charles Long[7] reports:

> The search for a panacea to solve achievement problems becomes more frenzied. Children are jerked out of one situation and regrouped into another with little or no serious concern about the possible side effects of such changes on the lives of boys and girls or about ways in which children learn best.

Research evidence relative to school practices and mental health remains limited; however, concern about mental health aspects of pupil learning is increasing. A research program at the Bank Street College of Education, says Long, has tentatively confirmed certain theories of personality development and the learning process which have meaning for the role of the teacher, for the curriculum, and, by implication, for the grouping of children for instructional purposes and teacher education. The basic propositions are:

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[4] Ibid., p. 13.

[5] Julia W. Gordon. "Grouping and Human Values," *Grouping Children for Instruction in the Elementary School: A Conference Points the Way.* Reprinted from *School Life* (June, July, December 1963 issues), OE–20062. Washington: U.S. Government Printing Office, 1964. p. 10–13.

[6] John D. Greene. "Focus on Program or People as Individuals," *A Guide to Research and Informed Judgment on Grouping Children*, Education Briefs No. 40, OE-20066. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, May 1964. p. 7-8.

[7] Charles M. Long. "Grouping of Children: Its Meaning for the Preservice Education of Teachers," *Grouping Children for Instruction in the Elementary School: A Conference Points the Way.* Reprinted from *School Life* (June, July, December 1963 issues), OE–20062. Washington: U.S. Government Printing Office, 1964. p. 17–19.

> 1. Education and mental health can be mutually reinforcing.
> 2. In every learning situation a pupil experiences simultaneously a dual process.
> 3. The principles of mental health should be infused into the learning process.
> 4. There is a major potential for positive growth in the interaction between different spheres of experience.
> 5. If a pupil's emotional processes are to become active elements of his learning experience, education must take responsibility for provision of integrating mechanisms and relationships.

C. *Various Aspects of Grouping*

Misconceptions about homogeneity are being recognized as blocks to good teaching and pupil learning. As John Greene points out, we as teachers have often hoped to find ways of dealing with the complex task of teaching which could accomplish in some easier and more effortless manner than has thus far been discovered. We would be well on the way to attaining this goal if we could teach 30 pupils in a given class as if they were 1. Homogeneity, Dr. Greene maintains, is an endeavor in this direction. He continues his report as follows.

> Many teachers have been "sold a bill of goods" on the matter of "homogenized groups of boys and girls." They have thought that ability-grouped children would be so much alike that they would not have the problem of individual differences. It is the matter of meeting individual differences that takes so much time, energy, and effort in everyday teaching. However, teachers of the so-called "homogeneous groups," who were led to believe that ability grouping would make for easy teaching, have had a rude awakening. In reality, human differences exist in any group. For example: Suppose that you are expecting to group children homogeneously on the basis of sixth-grade arithmetic achievement. In this mythical sixth grade there may be a young Einstein with science aspirations who made high scores on the arithmetic achievement test. His teacher concurs that he is very good in arithmetic and suggests that he be placed in a special group of high achievers in arithmetic. There is also a young Bach in the sixth grade who has high scores in arithmetic achievement. With his music interest and his ability to compose two- and three-part inventions with mathematical ingenuity, his teacher concurs that he is very sharp in arithmetic. There is also a young Jefferson who has an aptitude in engineering and the necessary high arithmetic scores. His teacher concurs that he should be in this particular group. In addition to this young Einstein, young Bach, and young Jefferson, there are 23 other students who have demonstrated similar abilities in mathematics. Teachers agree that they also belong in this particular homogeneous group because they met the necessary criteria.
>
> If one looked at achievement tests alone and the recommendations of the teachers, it would appear that we have a group of pupils who are so much alike that they could all be taught as one—an easy job. But this is not true, because each of these persons is an individual in his own right with particular aspirations in life that are quite different, and the teacher still has the problem of meeting individual differences. There is tremendous heterogeneity despite an attempt to group children otherwise. We need to realize that teaching is not easy; there are few shortcuts, if any. We should not be lured into complacency and think that the task of the teacher is made easier by a device such as homogeneous groupings; we cannot disregard the basic law of human nature that each child is a "custom-made" job.

Research about various aspects of grouping has contributed significantly to our knowledge. Out of 100 years of research, says Pat Wear,[8] we have learned—

> Much about the variablity of human personality and that no single form of grouping is best in all situations for all people.
>
> That changes in school or classroom organization do not automatically result in improved teaching and learning for children.

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[8] Pat Wear. "What We Have Learned About Grouping," *A Guide to Research and Informed Judgment on Grouping Children,* Education Brief No. 40, OE–20066. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, May 1964. p. 11.

It is apparent that behavior of educational leaders must change prior to, during the process of grouping, of following, if the nature of grouping is to change fundamentally.

That some varying forms of grouping in the classroom are necessary for interactions between pupil and pupil and teacher and pupil, and *quality interactions* are necessary for the optimum growth of both pupil and teacher.

That permissiveness to experiment with many forms of grouping has been restricted in many cases by tradition, fear, apathy, lack of knowledge and know-how, community expectations, and the like. The greatest limitation, however, is that set by the *individual's own limited perceptions of what he can do.*

That groupings of whatever form can no longer be based on the perceptions of the teacher only but must include the perceptions that the pupils, other teachers, parents, and others hold about grouping within that particular situation.

That we must learn to value different groupings for what they do to facilitate the growth of pupils and teachers at a given time and place. Comparisons become very difficult with many differences in beliefs, personnel, and environment.

D. *Learners or Learning*

Much has been said about the importance of meeting individual differences among children, but our struggle for increased knowledge, understanding, and skills in relation to the tasks involved continues. How to help each individual move toward his best poses many questions difficult to answer. In his presentation to the conference, "Learners or Learning?" Robert Bills[9] proposed consideration of a number of questions:

> Have we ever really shown concern for the individual learner or is he a thorn in our sides? Has not our concern been for learning rather than learners, administration rather than administrators, and achievement rather than achievers?

The challenge is offered that the uniqueness of the individual is oftentimes ignored, having importance only in terms of comparison with a group. But, the individual remains as the basic unit in educational work. One individual may not merely be added to another without destroying the individuality of both in the process. Again quoting Bills:

> When we ask, "Should we use homogeneous or heterogeneous grouping?", we are probably trying to reach a better basis for individualizing instruction. I suggest, however, that none of these methods is anything more than an administrative device to cope with the large numbers of children we are supposed to teach and the task of taking these large numbers of children in the directions we believe they should go . . . most people remain unconcerned with helping children develop in ways which children see as important or in helping them move in self-determined directions.

But it is difficult for us to ignore a multitude of factors, Bills continues, when we know that they are so important in human behavior and human welfare. As an afterthought, some studies ask, "What happens to those other things such as attitudes, values, and self-concepts?" However, few investigators have tried to devise learning situations in which attempts have been made to change the many variables important to human welfare, human well-being, and human behavior. The reason seems clear, according to Bills. We have not really seen them as of primary importance in human behavior, or as primary outcomes for education.

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[9] Robert E. Bills. "Learners or Learning?" *Grouping Children for Instruction in the Elementary School: A Conference Points the Way.* Reprinted from *School Life* (June, July, December 1963 issues), OE-20062. Washington: U.S. Government Printing Office, 1964. p. 10-12.

Chapter XIII

Pupil-Teacher Interaction and Learning

Few studies on grouping report any information about the teachers—what they did, how they worked with the children, or what was the interaction of teachers and pupils. Very little is indicated about the teachers as persons. It may well be that differences in pupil gains or losses, sometimes attributed to particular grouping procedures, may be the result of what happens between the teacher and the children after groups are formed. However, studies which show relationships between teachers and pupil learning are available. Examples follow:

Some investigations have been concerned with the interaction of teacher and pupil variables. One study[1] shows the ways in which patterns of teacher behavior interact differently with response patterns of children of varying personality characteristics. Children who are dependent, aggressive, withdrawn, or independently productive can be expected to respond in different ways to teachers who are orderly than to those more permissive and less organized.

Some researchers have investigated teacher influence on pupil attitudes and achievement. One study[2] was concerned with the effect of spontaneous behavior of a teacher on learning in a classroom, spontaneous interaction between teacher and the student, the interplay between different acts of the teacher, and the reactions of different types of students.

Part of this research[3] involved identification of certain patterns of teacher behavior and teacher influence. Of interest here were those patterns identified as direct teacher influence and indirect teacher influence—the first tending to restrict freedom of action of a student, the other increasing freedom of action. The achievement scores of seventh- and eighth-grade students in the fields of mathematics and social studies taught by the more flexible teachers were significantly higher than those of students taught by the teachers identified as least flexible.

One study concluded that teachers do react differently to children with varying potential. Though results do not present any clear picture with respect to differences in achievement, the researchers decided that teachers can be effective or obstructive with children's efforts to learn.[4]

Another study[5] reported that for both boys and girls, pupil satisfaction with the teacher and utilization of intelligence are positively related.

With reference to the influence of teacher behavior on pupil achievement, one researcher comparing the influence of the self-controlling teacher, the turbulent teacher, and the fearful teacher, found that the self-controlling obtained significantly higher achievement for all children—conformers, opposers, waverers, and strivers.[6]

Some researchers investigated teacher influence on pupil attitudes. High pupil self-concepts were found in classes of teachers who are socially integrative and learner-supportive. Negative relationships with self-concept were obtained with dominative, threatening, and sarcastic teacher behavior.[7]

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[1] Robert L. Spaulding. "Personality and Social Development, Peer and School Influence," *Review of Educational Research*, Vol. XXXIV, No. 5, December 1964. p. 595.

[2] Ned A. Flanders. *Teacher Influence, Pupil Attitudes and Achievement.* Cooperative Research Monograph No. 12. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, 1965, OE–25040. 126 p.

[3] *Ibid.*

[4] Seymour B. Sarason and Kenneth S. Davidson. *A Study of Teacher Behavior in Relation to Children Differing in Anxiety Level.* Cooperative Research Project No. 624. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, 1964. 26 p.

[5] Ronald O. Lippitt and others. *Pupil-Teacher Adjustment and Mutual Adaptation to Creating Classroom Learning Environment,* Cooperative Research Project No. 1167. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, 1964. 154 p.

[6] Louis M. Heil and others. *Characteristics of Teacher Behavior Related to the Achievement of Children in Several Elementary Grades.* Cooperative Research Project No. 352. Washington: U.S. Department of Health, Education, and Welfare, Office of Education, (conducted at Brooklyn College, New York). 1961. 119 p.

[7] Robert L. Spaulding. *Achievement Creativity and Self-Concept Correlates of Teacher Transactions in Elementary School Classrooms.* Cooperative Research Project No. 1352. Washington: U.S. Department of Health, Education, and Welfare, Office of Education. Urbana: University of Illinois, 1963. 126 p.

One study[8] shows that children obtaining scores on creativity tests have teachers who reward by the technique of *personal interest* and *praise* for personality attributes of the child and avoid *rewarding* by *evaluation.* The teaching is individual, and the teacher listens a great deal to the child. These statements hold true for children of *superior* mental ability; very few sizeable correlations were found between teacher behavior and creativity in children of *average* mental ability in the data.

Conclusive answers are difficult to get. However, the research indicates that the kind of interaction experienced between a pupil and his teacher does make a difference in what, how much, and how well he learns. The influence of grouping patterns on pupil learning cannot be adequately examined without taking into account the effects of pupil-teacher interaction and pupil learning.

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[8] Pauline Snedden Sears. *The Effect of Classroom Conditions in the Strength of Achievement Motive and Work Output on Elementary School Children.* U.S. Department of Health, Education, and Welfare, Office of Education, Cooperative Research Project No. 873. Stanford, California: Stanford University, 1963. 311 p.

Summary and Conclusions

The function of this survey has been to examine some of the research and informed judgment in response to questions about grouping and pupil learning.

That children learn many things from various kinds of group situations in and out of school is obvious to all who observe children at work or play. That they learn much from each other as well as from adults who are a part of the environment is equally obvious. Not so easy, however, is to determine what children learn, how much, how well, and toward what ends. Any endeavor to find out the extent to which certain grouping situations contribute to a child's progress or lack of it poses many questions difficult to answer.

To group or not to group is, of course, not the question, even though we become increasingly aware of possible hazards involved in any effort to organize children for what contributes to improved learning and achievement. If for no other reason, however, than the large numbers of children in our schools, grouping of some kind cannot be avoided. In any case, the significance of diverse kinds of learning gains that may result from different ways of grouping children should be a subject of continuous study. The schoolroom group may be one of the most important learning resources in the life of a child. If participation in the classroom group actually serves to fulfill his developing needs, he can become an active, satisfied, contributing learner. If not, it seems unlikely that much learning of a positive and helpful nature will take place.

Though still largely limited to study of academic achievement, a century of research has been conducted. A summary of findings and conclusions of this survey follows:

☐ A major purpose of education is to help every child reach his fullest potential for a creative and useful life lived in dignity and freedom. School practices of all kinds should be appraised in light of this purpose.

☐ Learning results from membership in many different kinds of groups—interest, friendship, committee work, panel discussion, instructional groups, and others. Learning gains stem from different purposes and needs.

☐ A group can be a resource for learning which provides opportunities for its members to learn from one another—new information, new values, and new ways of behaving.

☐ Research shows that human variability and a wide range of individual differences constitute normal phenomena. Authorities maintain that differences among children help to enrich resources for learning in the classroom. Consciously or unconsciously, children help to improve each other's opportunities for learning.

☐ The research examined is too limited for more than a tentative conclusion. However, a factor of special interest in the studies available is that, on the average, achievement gains made by pupils in classrooms representing more than a normal spread of differences among children were higher than average gains made by pupils in ability-grouped classrooms.

☐ Available evidence indicates that factors other than the particular grouping methods used account for differences that may show up in achievement gains between children grouped according to ability and those grouped heterogeneously.

☐ Among the most enlightening results of research is increased knowledge of the difficulties in attempting to divide children into ability groups. Except in a limited sense and for short periods of time, success in organizing children according to ability is probably an unrealistic expectation especially in the elementary school.

☐ A few studies have been conducted to determine possible effects of different organizational methods on pupil progress in learning to think, on development of creativity, and development of human values, self concepts, and attitudes. Findings are inconclusive.

☐ Research on teaching indicates that kinds of pupil-teacher interaction make a difference in what children learn. However, most studies on grouping do not report on the nature of pupil or teacher activities in the group situations described in the research.

☐ In view of the evidence, ample opportunity for flexibility in grouping children in the elementary school seems essential in order to provide opportunities for meeting changing needs of children as well as to meet a number of different purposes.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1966—O 214-698